

Verb Sandwich Constructions in Norwegian Sign Language

A syntactic analysis

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Master's thesis in linguistics
Department of Linguistics and Scandinavian Studies

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Preface

In the work of this thesis, I have been privileged with inspiring and competent supporters that have made the process significantly lighter and more graspable.

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Oslo, November 2010

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Notational Conventions

The list is mainly adopted from Sandler and Lillo-Martin (2006).

SIGN	Signs are glossed with an English word with capital letters, where the English word is an approximate translation from NSL.
SIGN-SIGN	If it is necessary to gloss a single sign by more than one English word, the component parts of the gloss will be separated by hyphens.
IX	Index sign.
IX _{PRO1p}	First pronoun index sign.
IX _{PRO1p.dua}	Pronoun inflected for number.
IX _{det}	Index signs that have the function of a determiner.
IX _{adv}	Index signs that have the function of an adverb.
POSS	Possessive.
VERB[asp:cont]	Verbs marked for aspect will be glossed with the aspectual marking in square brackets, where cont means continuative (continuative is the only aspect marking appearing in my data).
VERB[adv:intens]	Verbs marked for adverbial meaning.
VERB-WITH-	
INFORMATION[cl:limb]	Classifier constructions will be glossed with the extra lexical information in addition to the verbal action, as well as the type of classifier in square brackets. The types of classifiers are <i>limb</i> , <i>whole entity</i> (wh. entity) and <i>handle</i> .
SIGN (i.r.)	An interrupted sign will be glossed with parentheses.
S-I-G-N	The use of hyphens within one sign indicates fingerspelling.

____i

SIGN

A solid line above the glosses indicates non-manual markers for the signs they co-occur with. ‘i’ indicates the establishment of a locus. ‘neg’ indicates a negative headshake. ‘wh-q’ indicates the WH-question non-manual.

1 Introduction

In this thesis, I describe a phenomenon never before described for Norwegian Sign Language (NSL): Verb Sandwich Constructions. The verb sandwich constructions are earlier described for American Sign Language (ASL) by Fischer and Janis (1990), who described them as constructions in which a verb appears twice: once in its sentence-initial position and again in the sentence-final position. Consider the following example from the original analysis for ASL (Fischer and Janis 1990):

(1) STUDENT NAME S-A-L-L-Y TYPE HER TERM PAPER TYPE[asp:cont](...)

‘A student named Sally is typing her term paper (...)’

(Fischer and Janis 1990, 280)

The verb sandwich constructions in the original analysis were described as one category. Subsequently, it was divided into two categories: the aspectual verb sandwich constructions and the lexical verb sandwich constructions (Matsuoka 1997). In the lexical verb sandwich constructions, the last verb is a classifier construction, i.e. in addition to the verbal action, it is signed with extra lexical information, as reflected in the glossing in (2) (WITH-CHOPSTICKS). This example is also from ASL:

(2) ELIZABETH EAT R-I-C-E EAT-WITH-CHOPSTICKS+++(...)

‘While Elizabeth is eating her rice with chopsticks (...)’

(Fischer and Janis 1990, 284)

In this thesis I will describe both types of verb sandwich constructions in NSL and also propose an additional subdivision of the category of aspectual verb sandwich constructions, as I found that in some of the NSL verb sandwich constructions collected for this study, the inflectional pattern is identical in the two verbs.

The phenomenon called verb sandwich constructions has only been described for signed languages, and is thus interesting with regards to linguistic theory in general. However, we will see that there are some similar constructions found in spoken languages to which we will compare the verb sandwich constructions from NSL.

The descriptions of the data will be the most important contribution to the project, given the fact that descriptions of syntactic phenomena in Norwegian Sign Language (NSL) are few. However, the structural similarities between sign languages have proved to be of significance. Consequently, I can in the present study benefit from results and analyses conducted within other sign languages. Describing the verb sandwich constructions in NSL, I rely heavily on the analysis conducted for ASL on the same phenomenon (Fischer and Janis 1990). I have therefore made several assumptions that need thorough empirical investigation in the future.

Analyzing verb constructions is no small task, due to the fact that verbs have a central role in a clause. They are typically predicates, and hence decide the kind of argument-structure represented. In a language that lacks basic descriptions on the syntactic level it is challenging to address more complex syntactic issues. However, besides describing and analyzing the verb sandwich constructions, I have also attempted to point out some issues in need of more research.

It would appear that the initial goal of sign language linguistic researchers has more or less been achieved: this was to make the rest of the world acknowledge sign languages as real and natural languages. However, as for NSL, much work remains in accomplishing acknowledgment in terms of linguistic research. The ultimate goal of constructing a grammar for NSL is of obvious importance, since no such grammar currently exists¹. Also, in a wider perspective, the investigation of sign languages is necessary to integrate the sign language research into the wider field of linguistic research: “The goal of constructing grammars of signed languages allows us to understand structural properties of signed languages, but also enables comparison of oral and signed languages” (Padden 1988a, 252). I find it interesting to explore the research possibilities that lie in the fact that signed languages are produced and perceived in the visual modality and hence as languages may shed a new light on linguistic theory in general.

¹ Although, see Erlenkamp (Erlenkamp)

After describing the verb sandwich constructions, I will attempt to place my findings in a theoretical framework, which may be enlightening in terms of focusing on issues that would not otherwise be easily detected. I will make use of the framework of Lexical-Functional Grammar (LFG) in exploring the constructions. LFG has a level of representation, f-structure, which is claiming to be more universal than the constituent structure due to its abstract nature. F-structure is also independent of the linear sequence of constituents. At this stage of NSL research, where the basic sign order in NSL lacks empirical research, F-structure is a useful tool in that it is separated from the C(omponent)-structure, and there is therefore no need to account for the sign order at this level of analysis. However, as indicated, the main goal of my thesis is to create a starting point for Norwegian Sign Language research within the theories of generative grammar in general, and specifically LFG.

1.1 The organization of this thesis

In chapter two, an overview of relevant research on NSL is provided, as well as a brief description of the situation in Norway in the area of politics and administration regarding sign language research.

As already indicated I will be using results and analyses from other sign languages as well as from NSL, as I don't find the areas covered in NSL to be sufficient for my project. Due to this, the general features of signed languages relevant to my project are presented in chapter three.

In chapter four, I narrow it down by describing verbs in signed languages. Again I need to apply results from studies on other signed languages than NSL, specifically presenting the verb sandwich constructions described for ASL and subsequent analyses.

In chapter five, I present the theoretical framework employed in this thesis, namely Lexical-functional grammar. In this chapter, I also discuss the autonomy of syntax, accounting for why I find the results from spoken language research applicable for signed languages.

In chapter six, the methodological considerations are presented, as well as notational conventions. I account for how attempts have been made to label grammatical functions in signed languages, and give an example from NSL, demonstrating the difficulties of dividing grammatical from non-grammatical phenomena.

In chapter seven, I present and analyze the data, using the tools of Lexical-Functional grammar. As we will see, following Matsuoka (1997), I found that the verb sandwich constructions should be categorized into two main categories: lexical and aspectual verb sandwich constructions. In addition, I find a category within the aspectual verb sandwich constructions that looks like an empty copy construction, in that the second verb is identical to the first. This category has not been described for other sign languages.

Concluding the thesis, I try to show why the different categories of verb sandwich constructions need different analyses. I also highlight the notion of doubling, a phenomenon widely described for spoken languages. I show why most of the verb sandwich construction cannot be seen as doubling phenomena.

2 Norwegian Sign Language

2.1 Introduction

While sign language research in general had its beginning in the USA with the pioneering William Stokoe (1960), for Norwegian Sign Language (NSL), it was another twenty years before the first significant linguistic work appeared (Vogt-Svendsen 1981). Marit Vogt-Svendsen (1981, 1983, 1990, 2001, Vogt-Svendsen et al. 2007) has been the most important contributor throughout the history of NSL research. She describes how she as a teacher for the deaf made valuable observations as she was told to use speech and signs simultaneously, due to influence of the method of *oralism*², when teaching the deaf children: “It didn’t work! (...) Sometimes I used more signs than words, sometimes more words than signs to express the same thing. (...) Both speech and sign language changed character. The children didn’t understand me as well as before. There were a lot of misunderstandings” (my translation³) (Vogt-Svendsen 1983, 10). This experience led to insight that paved the way for accepting sign language as the language used in education of the deaf in Norway. The change of attitudes came gradually after the important starting point made by Stokoe (1960). As for Norway it is obvious that the change of attitude was at an initial phase with Vogt-Svendsen (1981 [1983]: 17).

Increasing the knowledge of minority languages is always important, as the status of a language will depend on the degree of scientific attention received by that particular language. The oldest generation of deaf people today had to grow up with negative attitudes toward their first language: “As a child, I remember that when my parents met other deaf people in

² Oralism was an educational method, prevailing in the large part of Europe before 1980, which uniquely advocated oral language instruction (List, Prillwitz, and Vollhaber 1990, 14). The ideal of oralism was that deaf people should be as ‘hearing’ as they could, which was ultimately founded in a view that regarded deaf people as defect hearing in need of rehabilitation (Kermit 2006, 49).

³ ”Det fungerte rett og slett ikke! (...) Av og til brukte jeg flere tegn enn ord, andre ganger flere ord enn tegn for å uttrykke det samme. (...) Talespråket, som tegnspråket, skiftet karakter. Barna forstod meg ikke så godt som tidligere. Misforståelsene var mange (Vogt-Svendsen 1983, 10).

the street, they would only use sign language discretely. They would prefer retiring to a place where others couldn't see them talking" (my translation⁴) (Svein Arne Peterson 2006, 71).

Today, NSL is fully acknowledged as a natural language, and it seems we are not far from having the acknowledgment formalized by making NSL one of the official languages in Norway (Svein Arne Peterson 2006, 77). However, Peterson (2006) points out that the University of Oslo's location of Norwegian Sign Language under the Department of Special Needs (Institutt for spesialpedagogikk) reflects an attitude toward education of the deaf that should be outdated (ibid.:72). His claim is that NSL, as other languages studied at the University, should be within the Department of Linguistics and Scandinavian Studies. Increasing the amount of extensive linguistic studies will be important toward accomplishing this goal.

The situation described above could be one of the reasons why NSL research has not been thriving in recent years. This makes it even more important to fill some of the gaps that are apparent in our knowledge of NSL. There are approximately 5,000 deaf signing people in Norway. However, the total number of signing people is approximately 16,500 (Erlenkamp et al. 2007, 3), including family, interpreters and teachers etc. This makes the sign language community in Norway the size of a little town, albeit spread all over the country (Haualand 2006, 19). The language of this community is in need of more research as the following statement is almost as true today as it was twenty years ago: "NSL seems to be as rich in syntactic, morphologic and phonologic structure as other sign languages whose grammar has been explored. However, NSL has only been the subject of pure linguistic analysis in very limited areas" (Vogt-Svendsen 1990, 4) (My translation⁵). One of the areas that has been neglected up to now is syntax. With this thesis I will attempt to amend this situation. Before presenting the subject of attention in my study, we need an overview of the investigated areas of Norwegian Sign Language relevant to my study.

⁴ "Som barn kan jeg huske at når mine foreldre møtte andre døve på gaten, var man svært diskret med å bruke tegnspråk. Helst trakk man seg til et sted der man var mindre synlig for andre" (Svein Arne Peterson 2006, 71).

⁵ "NTS ser ut til å være like rikt strukturert syntaktisk, morfologisk og fonologisk som andre tegnspråk hvis grammatikk er studert. Det er imidlertid ikke foretatt rent lingvistiske analyser av NTS innenfor mer enn noen få begrensede områder" (Vogt-Svendsen 1990, 4).

2.2 The linguistics of Norwegian Sign Language

As we have already seen, there are many gaps to fill concerning NSL research. However, there are some areas where the NSL researchers have been contributing. These areas include an alternative analysis of the notion of Timelines (Selvik 2006), an alternative analysis of the Classifiers (Erlenkamp 2009), the notion of Buoys (Vogt-Svendsen 2007), and the status of the mouth in signed languages (Vogt-Svendsen 2001). The overview presented below is by no means exhaustive, as I will limit the presentation to the contributions relevant for my study. I will provide examples from the data collected for this study for the purpose of concrete demonstrations.

2.2.1 Verbs in Norwegian Sign Language

With my focus being verb sandwich constructions, the natural starting point for the presentation will be verbs. No syntactic analysis that I know of has been conducted for verbs in NSL. Therefore, I will have to make some assumptions based on research from other signed languages (see chapter 4). Some claims about verbs have been made that will be adopted in this thesis. The first claim is that there is no indication for time being expressed through grammatical tense in NSL (Selvik 2006:7). On the other hand, aspectual marking expressing an internal temporal duration is observed (ibid.). Consider (1) from the NSL data collected for this study:

- _____i
- (1) READ NEWSPAPER_i DAY AFTER IX_{pro1p} READ[asp:cont]
- ‘I read the newspaper the next day’

In this example, the two underlined verbs form what I will in this thesis call verb sandwich constructions (Fischer and Janis 1990). While the first verb is unmarked, the last verb has a mouth gesture (see next section) accompanying it that I will treat as an aspectual modifier of the verb. Grammatical tense is not expressed on any of the verbs. Thus, following Selvik

(2006), I will assume that NSL is not a ‘tense language,’ but can express time lexically⁶. This is illustrated in (1): the adverb DAY AFTER indicates the time at which this event took place.

The aspect marking can also occur on classifier verbs (2.4.2) found in another type of verb sandwich constructions analyzed in this thesis; the lexical verb sandwich construction. In these constructions the second verb will be treated as a classifier verb (see section 2.4.2 for an extensive discussion of classifier constructions). Consider (2), also from the data collected for the present study:

- i
-
- (2) IX_{PRO} SEND SMS SEND-FROM-CELLPHONE[cl:handle][asp:cont]
‘She sent me an SMS’

In (2), the two verbs SEND and SEND-FROM-CELLPHONE[cl:handle][asp:cont] are phonologically very different from each other. The first verb SEND is an agreement verb (see section 4.1) and has a citation form that it is derived from; it is directed toward a first person benefactive. The latter is a classifier verb that phonologically cannot be considered a derivation from the citation form, i.e. classifier verbs don’t have citation forms (see section 4.3).

An alternative analysis of the classifier constructions in NSL is set forth by Erlenkamp (2009). She doesn’t find the notion classifier useful in the pursuit of insight into these constructions and consequently adopts the term depicting verbs from Liddell (2003:261). Erlenkamp’s analysis is conducted within a cognitive framework, and she finds that the “meaning construction of depicting verbs reminds more of the meaning construction of gestures than of lexicalized meaning as found in spoken languages or frozen verbs” (Erlenkamp 2009a, 29)(see section 6.2). While this approach to the classifier verbs gives

⁶ In some of the examples from the NSL data it is actually the past tense inflected verb that is the origin of the mouthing (see next section on *mouth patterns*) (This can be seen in verbs that are subject to change of vowel in the stem in past tense). However, this is considered influence from Norwegian in terms of code switching and will hence not be part of the analyses in this thesis.

valuable insight to the cognitive mapping mechanism these constructions are based on, I will still treat them as verbs, and will thus use the term classifier constructions henceforth.

2.2.2 Mouth patterns

In both (1) and (2) the second verb in the verb sandwich construction is accompanied by a significant mouth gesture. As the mouth patterns in NSL is one of the areas that has been given some attention, an overview is provided below.

There is currently a broad agreement among sign language linguists that there are at least two clearly identifiable types of mouth patterns in signed languages (Braem et al. 2001, 1), as is also the case for NSL: ‘NSL mouthing’s are movements derived from Norwegian spoken words while NSL mouth gestures are movements which cannot be traced back to Norwegian’ (Vogt-Svendsen 2001, 9).

As demonstrated in (1), repeated below, it is the mouth movements that bear no relation to the spoken language, that are most relevant to the structures I am investigating. We will see, however, that the pattern is not completely consistent. In some of the examples, mouthings occur with both verbs in the sandwich (see section 7.2). In (1) the mouth gesture with pursed lips contributes to the aspect marking of the last verb (see section 4.2):

- _____i
- (1) READ NEWSPAPER_i DAY AFTER IX_{pro1p} READ[asp:cont]
- ‘I read the newspaper the next day’

The terminology is not yet completely agreed upon, but in this thesis, I will make use of the distinction referred to above: the patterns related to spoken languages I will call “mouthings,” and the ones that don’t I will call “mouth gestures.” It should be noted that Vogt-Svendsen (2001:16) questions the strict distinction between mouthings and mouth gestures, as she finds only a few differences between them. The mouthings, being borrowed from Norwegian, have been restructured to fit the structure of NSL and are thus similar to what happens to the mouth with mouth gestures. Vogt-Svendsen concludes her study by assigning a higher status to the

hands with respect to their obligation, and calls them “the head of the mouth” (Vogt-Svendsen 2001, 34).

The distribution of mouth gestures is typically with non-modified verbs, modified verbs and classifier predicates (ibid.:17). In contrast, mouthings typically occur with nouns and non-modified verbs. In (1) and (2), repeated below with mouth patterns indicated, as (3) and (4), the pattern is consistent. The non-modified first verb is accompanied with a mouthing while the modified second verb occurs with a mouth gesture:

- (3) READ_{mouthing} NEWSPAPER_i DAY AFTER IX_{pro1p} i
i
READ[asp:cont]_{mouth gesture}
‘I read the newspaper the next day’
- (4) IX_{PRO} SEND_{mouthing} SMS_i SEND-FROM-CELLPHONE[cl:handle]_{mouth gesture} i
‘She sent me an SMS’

While Vogt-Svendsen (2001:25) discusses the general status of mouth patterns, this discussion will not be further investigated as it is outside the scope of this thesis. Simply observing that the pattern seems to be typical for the NSL data will be sufficient: The nonmodified verb occurs with a mouthing, while the modified verb occurs with mouth gestures. Having established this pattern here, I will in no longer annotate mouth patterns as in (3) and (4).

2.2.3 Buoys

Vogt-Svendsen et al. (2007) observed a phenomenon in NSL and other languages that they described as *buoys*. Buoys are signs that are maintained through physical presence and serve

as guides for the discourse (Liddell 2003). These buoys have been categorized in different types: list buoys, theme buoys, fragment buoys and pointing buoys (Vogt Svendsen et al. 2007:188). Semantically these signs help to guide the discourse by serving as conceptual landmarks.

Consider the following example collected for the present study:

(5) IX_{pro1p} SIT INTERPRET CNN HEAR (IX) INTERPRET[asp:cont]

‘I interpreted from CNN (what I heard.)’

This example will be further described in section (7.2.1) as for now we are only concerned with the sign HEAR(IX), which is not produced as the citation form of the verb HEAR. The signer points toward her ear, conveying that she used her “good ear,” taking in what sound it was possible for her to hear. I will treat this as a pointer buoy, as described by Liddell et al. (2007): “it points toward an important element in the discourse” (Liddell, Vogt-Svendsen, and Bergman 2007, 212). Pointer buoys are performed with the weak hand so the buoy may be maintained while the strong hand produces other signs (ibid.). In (5) it is the weak hand that performs the pointing, but as the weak hand is needed in the performance of the next sign INTERPRET[asp:cont], it is not maintained. I will however treat HEAR(IX) as a pointer buoy and not as a verb in my further analysis.

We have seen an overview of the issues relevant to the present study explored in NSL. As already indicated, the result from NSL research will not suffice as a base for my analysis, and I will therefore have to also make use of research from other sign languages. In the following, I will discuss central issues for my study based on other sign languages, predominantly American Sign Language (ASL).

3 General features of sign languages

3.1 Introduction

Signed languages occur in the visual-gestural modality (Schröder 2006, 81). Recent research projects, most extensively for American Sign Language (ASL), have revealed that many of the constraints designed for spoken languages also apply to signed languages (Cormier 2002, 237). Nevertheless, the sign languages of the world have some characteristics that separate them from the spoken languages: “Both the use of space and nonmanual signals are integral features of the signed modality and are used in all the signed languages that have been studied to date” (Cormier 2002, 237). Thus the modality makes signed languages look quite different from spoken languages. However, there are those who explicitly claim that the modality is in fact the only thing that distinguishes the signed languages in the world from the spoken languages (Lillo-Martin 2002). I will not go into the comparison of signed and spoken languages in detail, since it is not the focus of my thesis. Stating that there are different views on how to deal with the perceived differences will suffice as an introduction to the following. In this section I will give a short description of what the characteristics of the phonological and morphological level in sign language look like. Since the main focus of the present thesis is syntactic, I will concentrate on syntax.

Signed languages are natural languages. Like any other natural language no one “invented” the signed languages, they have simply arisen from the need to communicate. Also like spoken languages, signed languages evolve over time, and they have different dialects within one signed language. Regarding children’s acquisition of signed languages, children brought up in a sign language community acquire this language as their mother tongue just as naturally as the children who acquire spoken languages (Slowikowska 2009).

There is a wide consensus among sign language researchers that significant use of the locations in space is a characteristic of all the known sign languages of the world (Vonen 2006, 135). However, there is not so much agreement concerning what linguistic status this use of the signing space should be assigned, which will be demonstrated below.

3.2 Phonology

Like spoken languages, signs used in signed languages can be segmented into meaningless parts, but in contrast to auditive phonemes, the visual phonemes are made out of hand configurations; motion and placement of the hands, as well as positions and motions of the non-manual organs (Vonen 2006, 130). Signed languages consist of manual components that are performed by hand and non-manual components that are simultaneously found in facial expressions. This is why we can often find a specific description of both the manual and the nonmanual parts of a sign in a phonological description of sign language. The sign is the basic lexical unit in sign language. There are signs that are obligatorily produced with both hands and some that are normally produced with both hands, but can also be produced with only one hand without being unacceptable. In addition, there are signs that are obligatorily produced with only one hand. When signs are expressed with only one hand, this will most often be the dominant hand. Whether a person's dominant hand is the right or the left will most likely depend on whether the person is right-handed or left-handed (ibid.:131).

3.3 Morphology

The morphological system in signed languages typically differ from what we are used to in European spoken languages, as signs seem to have little inflection similar to the systems from Indo-European languages (Vonen 2006, 133). However, it is generally agreed that all known sign languages have a rich morphological derivation system. For example they have been compared to African languages, like Vata (Fischer and Janis 1990, 287), but also Asian languages, like Chinese (ibid.:288), which does not have a rich morphological derivation system. In the section of verb sandwich constructions (2.4), we will come back to these comparisons.

The morphological derivation processes are mostly non-segmental, that is, they are not realized as prefixes or suffixes. Instead they are manifested as changes of one or several aspects of a sign (Vonen 2006, 133). A sign can for example be reduplicated, so that the sign SEW can be performed repeatedly, like this: SEW-SEW-SEW meaning something like “sew for a long time” (Vonen 2006, 133).

As for the use of the space in front of the signer, there is a suggestion that this space reflects some of the morphological system in signed languages. The verbal agreement system is

claimed to be the prototypical example of complex morphological elements (Sandler and Lillo-Martin 2006, 29). On the other hand, this use of space has also been interpreted as plain gestural use of the signing-space, the same way speakers also make use of gestures in oral communication (Liddell 2003, 354). We will not deal with the controversy concerning the use of space in detail, as I regard this to concern the morphological level of sign language linguistics. However, the use of space is a central issue of sign language linguistics in general; hence a brief overview is provided below.

3.3.1 The use of space in sign languages

The use of space in sign languages, and how it makes them different, has always been a focal point within sign language research:

Maybe the most striking characteristic of sign languages, related to the manual-visual modality, is the use of space for grammatical purposes. However, this does not necessarily imply that the way the use of space is structured, is entirely different from the way spoken languages are organized. Yet, the fact remains that sign languages use space to express the grammatical function of elements in the sentence (Bos 1990, 243).

Sign language's modality makes the physical use of space a necessity in language use. However, we need to distinguish between two ways of using the physical space surrounding the signer. Signs are always articulated somewhere in space, and the location of a sign is a component of sign formation. This use of space, where space only represents localization of articulation, is only one parameter which must be included in the lexical entry of a sign (Sandler and Lillo-Martin 2006, 24). In addition, in every sign language we know of, spatial locations are used to represent specific referents by pointing at them. These areas that become meaningful in this way are often referred to as *loci*, or *referential loci* (Lillo-Martin 2002, 245). By the use of referential loci, an area in space is associated with a significant meaning, so that within a determined context, pointing toward, or otherwise directing a sign toward this locus, will automatically connect this meaning with the sign or pointing.

In her thesis on the interaction between morphology and syntax in ASL, Padden (1988) gives an illustration of the system, where the subscripts represent the referential loci (the number 1 in the subscripts indicates that the subject is first person):

(1) ₁INDEX ₁GIVE_i BOOK.

‘I gave him the book.’

(Padden 1988b, 26)

We can see that the INDEX sign (first person pronoun) and the starting point of GIVE have the same location and hence, according to Padden (1988), reflect subject-verb agreement. The end point of the verb GIVE reflects indirect object-verb agreement. Both the subject and the indirect object are null in (1), licensed by the verb agreement. Thus, when space is used as in (1), the locations represent referential loci.

It is the nature of this kind of referential loci that is subject to great controversy among sign language linguists; whether or not the referential loci should be viewed as a syntactic element expressing for example, agreement. As agreement is an intermediate phenomenon between syntax and morphology (Costa and Silva 2006), it could be argued that the loci of the signs should be reflected in my analysis. However, in the first syntactic investigation of verb sandwich constructions in NSL, I find it sufficient to place the phenomenon of agreement as mainly belonging to the morphological realm. Hence, information about loci will only be included in the transcriptions of this thesis where it is part of the argumentation in the analyses.

In addition to the uses of space within sign language grammar, there is also the area of gesture, that is not easily defined as a distinct level due to the fact that gestures in signed languages share modality with the rest of language production: “If, in one’s linguistic analysis, one wishes, on principle, to draw a line between language structural and non-linguistic communicative phenomena, one faces a challenging task describing sign language” (My translation⁷) (Vonen 2006, 137).

We have seen that the use of space in signed languages represents an important part of the grammar. There are two main grammatical functions to be detected concerning the use of space: location in space as part of sign formation (morphological use), and establishing specific referents in space (morphosyntactic use). In addition, gestures are also produced in the same modality as the grammatical uses, and may therefore also interfere with the uses of

⁷ ”Dersom man i sin lingvistiske analyse ønsker å trekke en prinsipiell grense mellom språkstrukturelle og ikke-språklige kommunikative fenomener, har man derfor en utfordring i tegnspråkbeskrivelsen” (Vonen 2006, 137).

space associated with grammar. The described uses of space are not easily separable, as they occur in the same channel, and may overlap.

3.4 Syntax

As it is the syntax of different verb constructions I will explore in this thesis, syntax will be dealt with more extensively than the two previous levels. Vonen (2006:137) points out that in sign language research, syntactic terms like subject and object are often used uncritically, i.e. they are used without actually building on the formal analysis that would serve as evidence that these phenomena exist independently of the analysis of spoken languages. This is something we will have to bear in mind while investigating syntactic structures in signed languages.

3.4.1 Sign order

Stokoe, the first sign language linguist, and the first one to acknowledge and analyze ASL as a proper language, proposes a relatively free ordering of S, V and O (Stokoe 1960, 8:383). He claims it is the inherent spatial ordering in a sign language which shows the relation of a verb to its arguments (ibid.:383f). He ascribes this feature to the “iconicity in complex linguistic signals” (ibid.). Fischer (1975) was the first one to propose SVO as the underlying sign order for ASL, and she explained the different orders observed in terms of topicalization.

Since Fischer (1975), researchers for different sign languages have claimed that signed languages typologically are “Topic-oriented” (Vonen 2006, 137). This means that the sentence can have one or more topic constituents initially, presenting the theme or frame of reference for the rest of the sentence. For ASL, Liddell (Liddell 1977) found that the identification of the nonmanual signal marking topics was crucial for solving the word order issue. This signal is illustrated as in (2):

- _____t
(2) MY CAT DOG CHASE
My cat, the dog chased it.

(Liddell 2003, 55)

Liddell describes this marking as consisting of raised eyebrows, a backward tilt of the head, and contraction of the muscles that raise both the cheeks and the upper lip (ibid.:54). Liddell proposes that the topics are structurally separated from the following clause, without any grammatical relationship to the verb. “That is, a topic is just a topic” (Liddell 2003, 58). This analysis entails a rejection of MY CAT as subject in (1), it only serves as an entity from the discourse context that is going to be important in what follows. The framework of LFG chosen for my study will provide a different analysis, as topic in LFG is treated as a grammatical function (see section 7.4).

It is generally agreed that since around 1980, the underlying word order in ASL is in fact SVO (Sandler and Lillo-Martin 2006, 288) and there are various arguments supporting this. We have seen that Liddell (1977) explains the different patterns with nonmanuals signaling topic, while on the other hand Neidle et al. (2000), making use of the most of Chomsky’s minimalist program, argue that SVO as underlying word order becomes apparent once CP-external material is properly identified and null arguments are recognized (Neidle et al. 2000, 49).

As we will see, the constructions I will be analyzing are among the constructions found that challenge the view of a basic sign order in signed languages (Matsuoka 1997, 127). Exploring the sign order in NSL is an issue too big for this thesis. However, I will comment on the sign order in light of the verb sandwich constructions in the concluding chapter.

Sequentiality

In the previous section, we have seen the possibility of expressing information simultaneously at the syntactic level as in (2), repeated below. (2) and (3) are both from ASL:

- _____t
(2) MY CAT DOG CHASE
‘My cat, the dog chased it’ (Liddell 2003, 55)

While (2) demonstrates the topic marking, (3) shows that question marking can also be expressed nonmanually, i.e. with facial expressions. In (3), raised eyebrows convey information that the utterance is a question:

- _____q
- (3) KNOW WHERE MY HOME
‘Do you know where my home is?’ (Liddell 2003, 159)

While we can see that simultaneity is important, the sequential structure has recently received extensive attention at the syntactic level: “The level of syntax and phrase structure is where sequentiality is perhaps most obvious in signed languages, and this may be one reason why we can fairly easily apply many of these syntactic principles to signed languages” (Cormier 2002, 237). Thus, the syntactic level seems to represent an exception, or rather, represent the one level that is *not* an exception from the constraints on spoken languages (see section 5.2).

Evidence for the view that signed languages display mechanisms similar to spoken languages at the level of syntax can be found. An example of this is from a comparison of negated sentences in two sign languages: ASL and German Sign Language (DGS), and three spoken languages: French, Háúsá, and Gá (Pfau 2002). Pfau (2002) finds that while the phonological side shows some modality-specific differences, the syntactic and morphosyntactic operations involved in the derivation of negated sentences are exactly the same. Here, I will present his comparison between one sign language, DGS, and one spoken language, Gá.

Gá is a Western Sudanic language spoken by about a million people in Ghana. In Gá, the realization of negation on the verb depends on the tense specification in the sentence. The most interesting case when comparing to a sign language is the past tense, as there is no visible Neg suffix. Instead, lengthening the tone of the stem and raising the tone alter the shape of the verbal stem (my *italic*):

Negation in Gá (Ablorh-Odijidja 1968, cited in Pfau 2002:271)

- | | | | | | | | | |
|-----|----|------------------|------|-----|----|------------------------|------|-----|
| (4) | a. | Mi-gbè | gbèé | kò | b. | Mi-gbéé | gbèé | kò |
| | | 1.SG.PAST-kill | dog | ART | | 1.SG.PAST-kill. NEG | dog | ART |
| | | ‘I killed a dog’ | | | | ‘I did not kill a dog’ | | |

In DGS, as in many other sign languages, negation is expressed by an optional manual component and an obligatory nonmanual component; a headshake that is associated with the predicate:

Negation in DGS (Pfau 2002:273)

- | | | | | | |
|-----|----|---------------------------------|--------|----------|---------|
| (5) | a. | MUTTER | BLUME | KAUF | |
| | | mother | flower | buy | |
| | | ‘Mother buys a flower.’ | | | |
| | b. | MUTTER | BLUME | KAUF | (NICHT) |
| | | mother | flower | buy. NEG | (not) |
| | | ‘Mother does not buy a flower.’ | | | |

This study is conducted within the framework of Distributed Morphology, which assumes the morphology to be distributed among several different components, letting word formation take place at any level of the grammar by operations such as head movement⁸ (Pfau 2002, 264).

The claim is that phonological readjustment rules in both Gá and DGS may lead to a stem-internal modification in exactly the same way. The feature [headshake] is by Pfau (2002) actually interpreted as a prosodic feature, leaving the analysis of the two languages very similar (Pfau 2002, 291f). The result is interesting, since the negating element in the nonmanual feature [headshake] has been extensively put forward, demonstrating the

⁸ For the basic assumptions of Distributed Morphology, see Pfau (2002:264f)

simultaneous nature of signed languages. According to this analysis, the feature [headshake] is simply altering the stem of the verb over which it occurs, as the raising and lengthening of the tone alters the stem of verbs in Gá.

Supalla (Supalla 1990, 130) acknowledges a significant sequential structure in ASL morphology, stating that there are physical restrictions on simultaneity. He proposes arbitrary grammatical restrictions on simultaneity, and makes a general point concerning sequentiality and simultaneity:

(...) sequential structure sometimes exists in ASL, even when the modality would permit simultaneity. The existence and nature of these structures in ASL, then, suggest that languages have strong tendencies toward serialization, and strong similarities in the way simultaneous referent properties should be represented sequentially in a sentence – not only in spoken languages, but in signed languages as well (Supalla 1990, 152).

Having established that sequentiality plays an important role in signed languages, we now turn to the issue of the simultaneous non-manual signals. The ability to convey linguistic information in two channels simultaneously seems to confuse everyone that tries to make this feature fit into theories and restrictions.

3.4.2 Non-manual signals

Since Stokoe's classic analysis of ASL (1960:72), the non-manual behavior in different signed languages has been acknowledged as an important part of the linguistic system. In contrast, how they should be analyzed and to what extent they are syntactic or prosodic markers have been controversial issues. In this section, I will give an overview of the current viewpoints.

“The term nonmanual signals was introduced in order to be able to describe aspects of signing that go beyond the actions of the hands” (Liddell 2003, 13). Liddell (1977) himself was the first one to describe signs that have obligatory mouth gestures connected to them. For example the ASL sign RELIEVED, where the lips must be rounded and pursed throughout the manual movement of the sign and in addition a puff of air is blown out as the hand moves downward (Liddell 2003, 13). Investigating syntactic structures in ASL, he found that a specific combination of facial features and head position constitute a grammatical marker for

relative clauses. From this point on, he discovered that the nonmanual signals were the key to identify several types of clauses.

The question concerning what kind of information the nonmanual signals convey is one of great controversy. For example, even though ASL is the sign language that has been most extensively researched, ASL researchers are far from having reached a conclusion on this subject. It has been claimed that the information conveyed by facial expressions represents important information about the syntactic structure (Neidle et al. 2000). The study conducted by Neidle et al. (2000) is within a generative framework, and they find a fundamental distinction between lexical and functional projections. One of their findings is that nonmanual syntactic marking to a large extent can be connected with the syntactic features residing in the heads of functional projections (Neidle et al. 2000:43).

The main criticism against this approach, and the conclusions drawn from it, has been that the data cannot serve as reliable evidence, since the non-manual markings can sometimes be measured to hold for the assumed node over which the markings spread, and sometimes not. Sandler and Lillo-Martin (2006) have, among others, consequently rejected the claim that head tilt and eye gaze as revealing hierarchical structure is empirically supported (Sandler and Lillo-Martin 2006, 314).

Sandler and Lillo-Martin (2006:460) shed some new light on the non-manual markers. The question concerning whether or not the non-manual markers should be interpreted as syntactic markers can be easier to answer if we take a look at the intonation patterns in spoken languages. According to Sandler and Lillo-Martin (2006), there are reasons to treat intonation in spoken languages as relevant to, or even part of syntax. With this perspective, there is no need to look at the non-manual markings in signed languages as strictly syntactic in order for them to be important syntactic markers. Sandler and Lillo-Martin argue against the view of Neidle et al. (2000) who claim that the non-manual markings are determined solely by syntactic factors. But more importantly (in my view), they address an issue that needs much more investigation in both signed and spoken languages; the potential interaction of intonational information with the syntax (Sandler and Lillo-Martin 2006, 471). This is yet another area where sign language linguistics sheds new light on linguistic theory in general (Vonen 2006, 136).

Clause boundaries

As we have seen, Sandler and Lillo-Martin (2006) argue that the facial expressions in ASL reflect intonational information. They find that clear rhythmic cues, e.g., pauses and breaths, separate utterances into Intonational Phrases such as parentheticals, nonrestrictive relative clauses, topicalizations, and tag questions (Sandler and Lillo-Martin 2006, 253). For example, when they elicited the Israeli Sign Language (ISL) sentences in (6), they were broken up into intonational phrases in the expected way:

(6) Intonational phrases in ISL

a. Parenthetical

[DOGS THOSE]_i[(YOU) KNOW]_i[LIKE EAT COOKIES]_i

‘Dogs, as you know, like cookies.’

b. Nonrestrictive relative clause

[BOOKS HE WRITE PAST]_i[I LIKE]_i[DEPLETE]_i

‘The books he wrote, which I like, are sold out.’

c. Right dislocated element

[THEY TIRED]_i[PLAYERS SOCCER]_i

‘They’re tired, the soccer players.’

d. Topic

[CAKE]_i[I EAT-UP COMPLETELY]_i

‘The cake, I ate up completely.’ (Sandler and Lillo-Martin 2006, 253f)

The ISL result is representative for the prosodic elements that may function as domain markers for the utterance boundaries in signed languages (Arellano 2006, 23).

Pfau and Quer (2010) also claim that the nonmanuals participate in structuring an utterance prosodically: “In sign languages, just as in spoken languages, utterances are organized in chunks that are characterized by intricate patterns of stress, rhythm and intonation. These

patterns are referred to as prosody” (Pfau and Quer 2010, 397). Further, they differentiate between edge markers and domain markers. Edge markers are punctual and signal the edge of a prosodic domain while domain markers spread over a sequence of adjacent signs, signaling that these constitute a syntactic domain (Pfau and Quer 2010, 397ff). An example of domain marking from the NSL data collected for this study is provided in (7):

- Q:wh
- _____i _____i
- neg
- (7) CANNOT OPEN OPEN-GARAGEDOOR[cl:handle] TRY-OPEN-
- Q:wh
- _____i
- neg
- KNOB[cl:handle]
- ‘Why couldn’t I open the garage?’

As we will see in the analysis of this example (section 7.4.2), I will treat the negation marking and the question marking in the nonmanuals as domain markers, defining (7) as one clause, and thus as a complex predicate construction (see section 7.4.2). Due to the simultaneous scope of both the question marking and the negation marking, I will argue that this construction is monoclausal, as reflected in the English translation. Dealing with these kinds of constructions in which there is more than one verb, the prosody will serve as important evidence for why they are treated as monoclausal.

When choosing the chunks of signs to analyze, I will attempt to consistently follow the prosodic markers of Intonational Phrases, edge markers or domain markers. As for the latter, they will be part of my transcription, as illustrated in (7).

Are the nonmanual components syntactic or prosodic?

We have seen that it is not always an easy task to separate prosodic and syntactic information from each other, as they are both conveyed by means of the nonmanual components. In fact “one nonmanual marker might play multiple roles in grammar” (Pfau and Quer 2010, 398). However, Pfau and Quer (2010) claim to have found an example from Dutch Sign Language that can serve to demonstrate the difference between the two levels of language structure, where the solid lines represent the nonmanual behavior, and the subscripts represent the loci in which the signs are produced. RPRO is a referential pronoun (Pfau and Quer 2010, 398):

- _____re[_____re]
- (8) a. Syntactic: TOMORROW [MAN (IX_{3a}) RPRO_{3a} TIE BUY] CONFERENCE_{3b}
GO-TO_{3b}
- _____re[_____re]
- b. Prosodic: [TOMORROW MAN (IX_{3a})] [RPRO_{3a} TIE BUY][CONFERENCE_{3b}
GO-TO_{3b}]
- ‘Tomorrow the man who is buying a tie will go to a conference.’

In (8a), we can see that the antecedent noun MAN is grouped with the relative clause material syntactically, while the grouping in (8b) demonstrates that the noun MAN and the preceding adverbial is an intonation phrase independent of the relative clause. The latter is indicated by the scope of the nonmanual marking (Pfau and Quer 2010, 398).

Thus, the syntactic and prosodic markers are both to be found in facial expressions, and it is possible to distinguish the two in cases like (8). However, the two types of information will usually naturally overlap, so examples like the one in (8) are not easy to come by.

Ever since Stokoe (1960:72) observed that the nonmanual activity could be employed on several levels of language structure, sign language researchers have come to the same conclusion: “Since the Intonational Phrase divisions are often isomorphic with the syntactic structure, it is usually difficult to determine which level controls the spread of the non-manual marking”(Sandler and Lillo-Martin 2006, 470).

As for eyebrow movements, positions of the cheek and body posture, this information will be omitted in my descriptions of the data. The reason why I am omitting information is not due to a rejection of these signals as important parts of the grammar, but due to the fact that I don't find the signals significant for my focus, which is the syntax of verb sandwich constructions. Mouth gestures will not be transcribed as such, but they do sometimes have aspectual interpretations and will therefore be part of my transcription as markers of aspect. The eye gaze will be transcribed when relevant to my analyses. While I am convinced that a large part of the eye gaze activity can be accounted for as prosody, I still believe that the eye gaze activity consists of important syntactic information. At the current stage, I (and most other sign language researchers) have not yet fully grasped to what extent this is the case, and where to draw the line between syntactic and prosodic information. For my purpose it will suffice to transcribe the eye gaze movement where it is part of my argumentation in the analyses. I will adopt the approach of Sandler and Lillo-Martin (2006), described above.

4 Verbs in sign languages

4.1 Verb typology

Since the main focus of this thesis is clauses with more than one verb, I will as we have seen, assume that the lexical units I am labeling verbs, are actual verbs. However, it is important to bear in mind that the formal analysis that would confirm my treating these lexical units as verbs is currently nonexistent (Vonen 2006, 139). Apparently, this is not always regarded as a problem: “With respect to syntax, this issue is largely irrelevant since the formal constituents have little or nothing to do with the peripheral systems in which they are expressed. A noun phrase is a noun phrase regardless of whether it is signed or spoken” (Brentari 1995, 39). Nevertheless, I find it necessary to make this proviso.

I will however adopt a verb typology based on the categories in other sign languages. Padden (1988) identifies three classes of verbs on the basis of which affixes may be added to them: “Plain verbs”, “inflecting verbs” and “spatial verbs.” The examples used to illustrate the verb types are from ASL (Padden 1988). The plain verbs only inflect for aspect and not for agreement, while the other two types of verb inflect for agreement. Hence, the verb KNOW is articulated in exactly the same way, independent of its surroundings:

(1) _iINDEX KNOW _iINDEX

‘I know her’

(Padden 1988b, 38)

The category “inflecting verbs” was subsequently (1990) renamed “agreement verbs” due to the fact that the plain verbs also inflect, but only for aspect. The agreement verbs mark for person and number of the subject and object, and thereby for the grammatical function of elements in the sentence. We have already seen an example with an agreement verb, repeated below:

(2) _iINDEX _iGIVE_i BOOK.

‘I gave him the book.’

(Padden 1988b, 26)

Spatial verbs are marked for location and position of elements in the sentence, and include the verbs that will be called classifier constructions in this thesis (section 4.3). These have also been described in terms of a defining characteristic; that they may start at positions in space different from the one that represents their subject⁹ (Bos 1990, 237). In (3), however, the beginning point of the verb appears in the same locus as the subject:

(3) _iINDEX _iWALK_j

‘He walked over there.’

(Padden 1988b, 42)

While the agreement, spatial and plain verb distinction has been documented for most of the sign languages investigated (Sutton-Spence and Woll 1999), Engberg-Pedersen (1993) on the other hand proposes a different classification. She makes a major two-way distinction between two extremes on a continuum: the nonpolymorphemic and the polymorphemic verbs, with plain verbs and agreement verbs belonging to the former group. The latter type is the group of classifier predicates (Engberg-Pedersen 1993, 58). The reason why she opposes the traditional classification is that “the distinction between nonpolymorphemic verbs having a locative meaning and transitive verbs is primarily a semantic one” (Engberg-Pedersen 1993, 161). By her main distinction she claims to have found a classification made on both morphological and semantic grounds.

The labeling of one of the verb types as agreement verbs indicates the occurrence of verb agreement in signed languages. Following Lillo-Martin (2002:255) the spatial contrasts used

⁹ The distinction between spatial and agreement (inflection) verbs has been challenged. Bos (1990) found for Sign Language of the Netherlands (SLN) that the same verb could be observed in both constructions defining it as an inflecting verb and constructions resulting in an analysis as a spatial verb, consequently concluding that the distinction is problematic (Bos 1990, 231).

in agreement will not be regarded as syntactically relevant in this thesis. Accordingly, agreement patterns in my data will not be represented in the transcriptions. Consequently, although I agree with Lillo-Martin (2002) advocating the view that ASL verbs show agreement, the verbs will be transcribed by a gloss regardless of the verb's agreement behavior.

4.2 Verbs marked for Aspect

As we have seen, one of the sandwich constructions investigated in this thesis is the aspectual sandwich construction in which one or both of the verbs is marked for aspect. In Comrie's (1976) classic definition, he states: "aspects are different ways of viewing the internal temporal constituency of a situation" (Comrie 1976, 3). In signed languages aspectual modifications are expressed through changes in movement (Engberg-Pedersen 1993, 266). Since phonology is not the focus of my analyses, the specific movement patterns of the aspectual marked signs will not be reflected in my thesis. In the following, I will give an account of what the aspectual marking actually entails.

I have in this thesis adopted the marking of aspect in square brackets by Fischer and Janis (1990), as in (4) from the NSL data collected for this study:

- (4) SHEET-OF-PAPER CUT[asp:cont] PREPARE CUT[asp:cont]
 'I prepare (by cutting the pictures)'

However, we need to comment on what kind of behavior this notation actually indicates, as it is not always the same. In (4), both of the verbs are marked for aspect. 'Cont' means continuative, and entails an imperfective aspectual marking. The actual "change in movement" (Engberg-Pedersen 1993) is in (4) a repetitive execution of the verb CUT. However, in the following example, the movement is characterized by a slight hold:

- _____i
 (5) IX_{pro} READ_i READ[asp:cont]
 'While she was reading (...)'

As for the nonmanual behavior in (5), the first verb READ includes a mouthing, while the second verb READ[asp:cont] includes a mouth gesture (see section 2.2.2). We can also see that the eye gaze behaves differently with the two verbs. It is first directed toward the loci, establishing the referent which is being read, while the gaze is directed toward the interlocutor with the sentence-final verb. As already stated, the movement of the second sign is characterized by a slight hold.

In the next example the change in movement is very subtle. It is however possible to trace a slight hold movement, i.e. the sign is “frozen” for a short time:

- (6) READ NEWSPAPER_i DAY AFTER _____i
 IX_{pro1p} READ[asp:cont]
 ‘I read the newspaper the next day’

In addition, there is a mouthing accompanying both the first verb READ and the last verb READ[asp:cont]. Thus, the mouth gesture accompanying the verb marked for aspect in (5) is not obligatory if this is also a verb marked for aspect. However, there is a head nod accompanying this last verb, as well as a change in body posture. I will in this thesis make the assumption that nonmanual behaviors (head nod and body posture) together with the slight change in movement, form the aspectual marking of this verb.

We have seen that it is not always easy to trace the change in movement defining the aspectual marking of the verb as the changes of movement are differently executed. I also assume that the nonmanuals can also be part of the aspect marking of the verb. The different ways to mark aspect may reflect different semantic nuances in the aspect marking, which I cannot go into the details of here. In the present analysis, the aspect marking in square brackets (Fischer and Janis 1990) represents one or more of the possible ways to mark aspect in Norwegian sign language.

4.3 Classifier Constructions

The lexical verb sandwich constructions contain an agreement verb and a classifier. Consider the following example from the NSL data collected for the present study:

- _____j
- (7) IX SEND SMS_j SEND-WITH-CELLPHONE[cl:handle]
‘She sent me an SMS’

We have seen that the verb SEND in (7) is an agreement verb while the classifier constructions SEND-WITH-CELLPHONE[cl:handle] don’t have a citation form and is phonologically very different from the verb SEND.

The term classifier indicates that these constructions are presumed to *classify* nominals (Edmondson 1990, 187). The use of the term classifier is not entirely uncontroversial, considering that the comparison to the classifiers in spoken languages is not always successful (Sandler and Lillo-Martin 2006, 83). However, the term is used for a diversity of phenomena in spoken languages. Sandler and Lillo-Martin (2006:83) found that the *verbal classifier* from spoken languages is in fact comparable, and consequently the term is acceptable. Following the approach taken by Sandler and Lillo-Martin (2006), I will adopt the term classifiers in this thesis.

As for the syntactic properties of the classifier constructions, there are several approaches represented in literature. One approach, closest to the verbal classifier analysis from spoken languages (Mithun 1984), is the Noun Incorporation approach, while another is to treat the classifiers as a kind of agreement¹⁰. Since the syntactic analysis of classifiers per se exceeds the scope of my thesis, the details of these approaches will not be discussed any further here. As we will see from the analyses, I have chosen the noun incorporation approach, indicating that the classifier constructions may contain incorporated lexical information, affecting the classifier verb’s argument structure (Sandler and Lillo-Martin 2006, 345).

¹⁰ For a review of the two approaches, see (Sandler and Lillo-Martin 2006, 344)

It has been proposed for the classifier constructions that they should not be regarded as verbs (Sandler and Lillo-Martin 2006), since they have properties that differ from those of a word. Sandler and Lillo-Martin (2006:79) point out the fact that each hand may have autonomous functions, and the constructions in question are thus different from lexical signs. In lexical signs, the non-dominant hand is only functioning phonologically, i.e. it cannot function independently of the dominant hand. One solution has been to treat them as bound morphemes (e.g. Wallin 1994). Although I recognize the problems with treating the classifiers as verbs, I will in this thesis treat them as morphologically complex verbal forms (Benedicto, Cvejanov, and Quer 2007, 1202).

While there have been several proposals for the categorization of the different classifiers, I will adopt the system presented by Engberg-Pedersen (1993) who categorizes the classifier verbs (which she labels polymorphemic, section 4.1) depending on what kind of stems they are made of. The stems can be divided into four main categories: *Whole entity stems*, *handle stems*, *limb stems* and *extension stems* (Engberg-Pedersen 1993, 273ff). As for the examples analyzed in my NSL data, they represent whole entity stems, handle stems and limb stems. Whole entity stems are used to predicate something about entities, a mass of entities regarded as a whole, or a specific number of entities regarded as a whole (ibid.:273). Consider (8) from the NSL data collected for the present study:

- i
-
- (8) CLEAN[adv:intens] CLEAN-FROM-CORNER-TO-CORNER[cl:wh. entity;
 _____ i
 adv:intens]
 'I clean the floor from corner to corner.'

In (8), the hand shape¹¹, in the verb glossed CLEAN-FROM-CORNER-TO-CORNER cannot directly be claimed to depict the cloth getting up all the dust, neither is it the handling of a cleaning device. Rather, it has a somewhat abstract illustration of cleaning the floor from corner to corner. Thus, the incorporated information in this classifier conveys specification of

¹¹ B-hand, i.e. a flat hand.

the location of the action: cleaning the floor from corner to corner. The lexical information conceived as a whole is *the whole floor*.

The handle stems are used to express human hands handling something (ibid.:275), as in (7), repeated below as (9):

- _____j
- (9) IX SEND SMS SEND-WITH-CELLPHONE[cl:handle]
 ‘She sent me an SMS’

The limb stems “are used in verbs to denote the motion or state of animates indicated by the motion or state of their limbs; limb stems are generally used with shifted attribution of expressive elements” (Engberg-Pedersen 1993, 278):

- _____i
- (10) WOMAN FAT RUN[adv:fast] RUN – DOWNSTAIRS-IN-
 _____i
SPIRAL[cl:limb][adv:fast]
 ‘A fat woman ran all she could down the (spiral) stairs’

In (10) the hand shape¹² in the verb glossed RUN-DOWNSTAIRS-IN-SPIRAL[cl:limb][adv:fast] depicts two human legs.

Using the term classifier for these constructions while adopting Engberg-Pedersen (1993) classification of stems, renders the terms *whole entity classifiers*, *handling classifiers* and *limb classifiers*, as will be used henceforth.

¹² Bending the index finger and middle finger

We have seen that both terminology and the analysis of the classifier constructions in signed languages vary. Despite the problems of the comparison to classifiers in spoken languages, I find that as claimed by Sandler and Lillo-Martin (2006), and Aronoff et al. (2003), the definition of the term can be seen as an appropriate description of the nature of the classifiers found in signed languages: morphemes that classify nouns according to semantic criteria (Aronoff et al. 2003, 63).

4.4 Argument realization in sign languages

The Projection Principle requires that all arguments selected by a predicator be present at all levels of the grammar (Chomsky 1981:38). ‘Null anaphora,’ the phenomenon that in some languages, argument NPs are freely omissible, seems to be a problem for such a requirement (Nordlinger 1998, 33f). In the NSL data presented in chapter 7, we will see that there are many instances where the subject or object is null. In this section we will see that sign languages are ‘prodrop’ languages: subject and/or object can be null if licensed by agreeing verbs (Müller de Quadros and Lillo-Martin 2010, 251).

We have already seen that I will adopt the noun incorporation analysis of the classifier construction (see previous section) and that consequently arguments can be realized within a classifier verb.

Languages with a rich system of overt morphological agreement tend to allow null pronouns. The assumption is that the rich verbal morphology “licenses” the null arguments (Sandler and Lillo-Martin 2006, 390). Lillo-Martin (Lillo-Martin 1991, 4) claims that ASL licenses null pronouns in two distinct ways: By agreement, and by null-topics. In ASL, both subject and object NPs can be non-overt (Lillo-Martin 1991, 51). Contrary to this, is the view of Neidle et al. (2000) who claim that agreement can be expressed either by manual or non-manual information, and both of these expressions of syntactic agreement can account for null arguments (Neidle et al. 2000:4). Thus, Neidle et al. (2000) and Sandler and Lillo-Martin agree that null arguments occur in ASL. However, for Neidle (2000) there is only one way these null arguments can be licensed, whilst for Lillo-Martin (1991) and Sandler and Lillo-Martin (2006), there are two.

We have seen that it is agreed that ASL is a pro-drop language, while there are different theories concerning what licenses the null arguments. The different theories as to what

licenses the null arguments will not have any implications for my analyses. Following Schröder (2006), I will assume that NSL is a pro-drop language, and that we will see examples of clauses with null arguments in the NSL data to be presented.

4.5 Verb Sandwich Constructions

The Verb Sandwich Constructions were observed for the first time by Fischer and Janis (1990): “ASL has constructions in which a verb appears twice: once in its sentence-initial position and again in the sentence-final position, marked with morphology such as aspect or a classifier” (Fischer and Janis 1990, 280). In (11) we see an example from ASL where the sentence-final verb is marked for aspect (ibid.):

(11) STUDENT NAME S-A-L-L-Y TYPE HER TERM PAPER TYPE[asp:cont](...)

‘A student named Sally is typing her term paper (...)’

(Fischer and Janis 1990, 280)

In (12), also from ASL, the sentence-final verb is a classifier-verb:

(12) ELIZABETH EAT R-I-C-E EAT-WITH-CHOPSTICKS+++ (...)

‘While Elizabeth is eating her rice with chopsticks (...)’

(Fischer and Janis 1990, 284)

Based on many findings like this, Fischer and Janis worked out the following restrictions on the verb sandwiches:

(13) SUBJECT VERB + SOME-INFLECTION (OBJECT) (ADJUNCTS) VERB +
DIFFERENT-INFLECTION

This is not intended to be a sufficient schematization, as they acknowledge the need for elaboration in order to include some of the syntactic information (Fischer and Janis 1990, 287). Their analysis entails that the two verbs in a verb sandwich construction must share the same subject, and that the clause would be ungrammatical if the verbs were to switch places. They therefore conclude that there seems to be a restriction saying that the highly inflected verb must occur in the final position (Fischer and Janis 1990, 283). The reason why this is not reflected in (13), is that they also find some examples in which the morphological information need not be of a greater amount; the crucial point is that the information is different (Fischer and Janis 1990, 285). From the NSL data collected for this study, we will see examples that are not covered by this description: verb sandwich constructions in which there is no difference to the information represented on the two verbs.

Observing that the verb sandwich constructions were often to be found in sentences involving interruption of some activity, Fischer and Janis (1990) conclude that one main function of verb sandwich constructions with aspectual inflection on only the second verb seems to be to signal the subordinate clause in which it occurs (ibid.:283):

(14) S-H-E LISTEN R-A-D-I-O LISTEN_{i^{asp:cont}} HEAR! SAY WATERFLOW,
THROUGH. (...)

‘While she is listening to the radio, she suddenly hears that there will be a flood. (...)’

(Fischer and Janis 1990, 283)

Fischer and Janis (1990) propose that to understand these constructions properly, we need to look at the “general constraint on the amount of information that can be carried by a single verb; in other words, there is a limit on how "heavy" a verb can be. When this limit is exceeded, another verb must be presented to carry some of the load” (Fischer and Janis 1990, 185). This is known as The Functional Analysis. Later, they also proposed another way of

analyzing this phenomenon: The Movement Analysis (Fischer and Janis 1992)¹³. Considering the LFG non-movement paradigm, this analysis will naturally be challenged in this thesis. Fischer and Janis (1990) claim that these constructions are based on syntactic factors rather than the specific morphology. The syntactic factors may or may not be explicitly expressed by the morphology.

As the verb sandwich construction seems to be more common in signed languages than in spoken languages, the description provided here is based mainly on signed languages. However, similar constructions are found in Vata and Chinese, albeit labeled differently (Fischer and Janis 1990, 287ff). In Vata, they are used to emphasize the verb, supported by the argument that the verb needs to fulfill two functions simultaneously, and is therefore copied. In Chinese there is a functional explanation for the verb sandwich construction: A verb cannot be followed by more than one argument or adjunct (Fischer and Janis 1990, 288). In Vata it is the functions that become too heavy, while in Chinese the arguments or adjuncts following the verbs become too heavy. Consequently, Fischer and Janis find that all three languages use the verb sandwich construction to avoid heaviness, although different things can count as “heavy” (ibid.:289).

To summarize, Fischer and Janis (1990) find two articulations of the same verb (or two verbs with highly similar roots) with differing morphological information to define the verb sandwich constructions. There may or may not be a filling occurring between them. If occurring, it may be an object, a sentential adjunct, or both.

4.5.1 New analyses of the Verb Sandwich Constructions

Since this first observation of verb sandwich constructions, other sign language researchers have described them for other sign languages. Sutton-Spence and Woll (1999) take the same approach as Fischer and Janis in analyzing the verb sandwich constructions, claiming, “some verbs in BSL have so much information to carry that it cannot all be carried in one sign” (Sutton-Spence and Woll 1999, 150).

¹³ ”License to derive: Resolving conflicts between syntax and Morphology in ASL” Unpublished Manuscript. This Manuscript has not been accessible, consequently the description here is based on Matsuoka’s (1999) referring.

However, Matsuoka (1997, 1999) indicates the problems with Fischer and Janis' functional analysis, pointing out that it does not account for the fact that the verbs in a verb sandwich construction appear in a fixed order (Matsuoka 1997, 130). It is also a problem for this analysis that the same aspectual marking occurs in other types of sentences with only a single verb. Attempting to solve these problems, Matsuoka (1997) proposes two distinct types of VSCs: the lexical and the aspectual VSCs. According to this distinction, the aspectual verb sandwich is the one that includes verbs with aspect markers, such as in (11), repeated below:

(11) STUDENT NAME S-A-L-L-Y TYPE HER TERM PAPER TYPE[asp:cont]

‘A student named Sally is typing her term paper (...)’

(Fischer and Janis 1990, 280)

The lexical verb sandwiches, in contrast to the aspectual verb sandwiches, are signed with extra lexical information on the sentence-final verb (Matsuoka 1999, 143), such as in (12) repeated below:

(12) ELIZABETH EAT R-I-C-E EAT-WITH-CHOPSTICKS+++ (...)’

‘While Elisabeth is eating her rice with chopsticks (...)’

(Fischer and Janis 1990, 284)

Fischer and Janis' (1992) analysis of these constructions for ASL suggests that the instrumental and the locative are realized as bound morphemes (affixes) on the verb, which may be realized in the form of classifiers. Matsuoka (1999) includes the lexical verb sandwich constructions in a unified analysis of three phenomena in ASL: Verb Final and Object Raising, in addition to the verb sandwich constructions (ibid.). The Verb Final and Object Raising constructions from ASL are exemplified below:

Verb Final:

(15) S-H-E R-A-D-I-O LISTEN[asp:cont]

‘She was continuously listening to the radio’

(Romano 1991, cited in Matsuoka 1997:131)

(16) **Object Raising:**

_____t

PURSE WOMAN LOSE

‘The woman loses the purse.’ (Liddell 1980, cited in Matsuoka 1997:131)

Using the framework of Minimalism, Matsuoka (1999) elaborates the Movement Account, first proposed by Fischer and Janis. The Movement Account entails that “the verb moves to Agr (head-initial) and then to Asp (head-final) to license a potentially stranded Aspect morpheme. A trace of the verb is phonetically realized as a resumptive verb” (Matsuoka 1999, 143). As the concept of movement is not part of LFG, I will not pursue this analysis any further in this thesis. In the next chapter, we will see how LFG may deal with these phenomena.

Engberg-Pedersen (1993) has a somewhat different approach to the verb sandwich constructions. In her terms, they are characterized by “shifted locus with gaze direction imitative of the referent of a verb’s argument” (Engberg-Pedersen 1993, 271). She is thus accounting for the phenomenon at the level of discourse structure, in contrast to the syntactic analysis of the present thesis.

Liddell (2003) proposes yet another analysis of the verb sandwich constructions. He interprets them as a solution to the general problem that aspectual verb forms cannot occur with a direct object. The example he discusses is (17):

(17) POSS-1 FRIEND TYPE T-E-R-M PAPER. TYPE^{DURATIONAL₁} ALL-NIGHT

‘My friend typed her term paper. She was typing it all night.’

According to Liddell (2003) the reason why this construction is generated is that TYPE^{DURATIONAL₁}, being marked for aspect, cannot be followed by an overt object, thus signers need a way to make the “thing typed” prominent. As can be seen from the dot in both the glossing and the translation, he claims that (17) should be analyzed as two clauses where the first clause consists of the simple verb TYPE followed by a direct object. “This introduces the term paper into the discourse” (Liddell 2003, 64). Further, he explains that the next clause TYPE^{DURATIONAL₁} ALL-NIGHT elaborates the description of the typing by including the aspectual information and the adverb ALL-NIGHT. Analyzing the verb sandwich constructions, I will argue against treating them as biclausal based on prosodic information. In the analyses to come, we will see that the prosody markers can serve as evidence that we have good reason for treating the verb sandwich constructions as one clause.

Having presented the phenomenon investigated in the present study, we now turn to the theoretical framework used in the analyses.

5 Lexical Functional Grammar

Lexical Functional Grammar (LFG) is a *lexicalist* and *non-transformational* syntactic theory, operating with several distinct levels of representation. The characteristic feature of lexicalist theories is that the word plays a central role in the syntax, which involves an elevation of the role of the lexicon. The lexical Integrity Principle states: “words are the “atoms” out of which syntactic structure is built. Syntactic rules cannot create words or refer to the internal structures of words, and each terminal node (or “leaf” of the tree) is a word” (Falk 2001, 126:4). As a result of this, a word cannot be built out of a syntactic operation, and the syntactic structure cannot be built out of anything other than words (ibid.:5). The presentation of LFG in this section will be based on the three main levels of representation. The term non-transformational will be accounted for in the section of a-structure.

The main levels of LFG are functional structure (f-structure), constituent structure (c-structure) and argument structure (a-structure). The argument for why we need these levels is based on the possibility to have a theory of Universal Grammar. Generative linguists refuse the possibility of adequate characterizations of language based on its surface structure. Thus a more abstract representation is needed (Bresnan 2001, 3). Given the diversity of the world’s languages, specifically the distinction found between configurational¹⁴ and nonconfigurational¹⁵ languages (see section 5.4), one level of representation simply does not cover the needs of a universal grammar.

Presenting the different levels of representation, I will give a depiction of the following sentence for each level:

- (1) I hate cleaning in the morning

5.2 C-structure

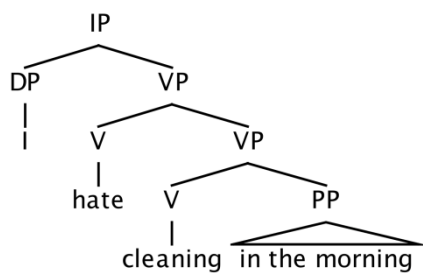
The most familiar level within the generative approach will be c-structure, as this level is represented by means of the syntactic tree. However, the function of the c-structure tree in

¹⁴ Languages in which the conceptual units are expressed by means of a phrase structure. These are the most common in western languages.

¹⁵ Languages in which the phrases are not essential to the expression of conceptual units (Bresnan 2001). In these languages, it is the morphology that identifies the argument functions (Nordlinger 1998, 69).

LFG differs from that of the tree in transformational theories. The c-structure tree in LFG is where the hierarchical and sequential structure is represented (Falk 2001, 126:33). According to the Lexical Integrity Principle, we cannot see inside words in c-structure, and the nodes of the tree can never be anything else other than lexical units, that is words. This is the c-structure representation of (1):

(2)



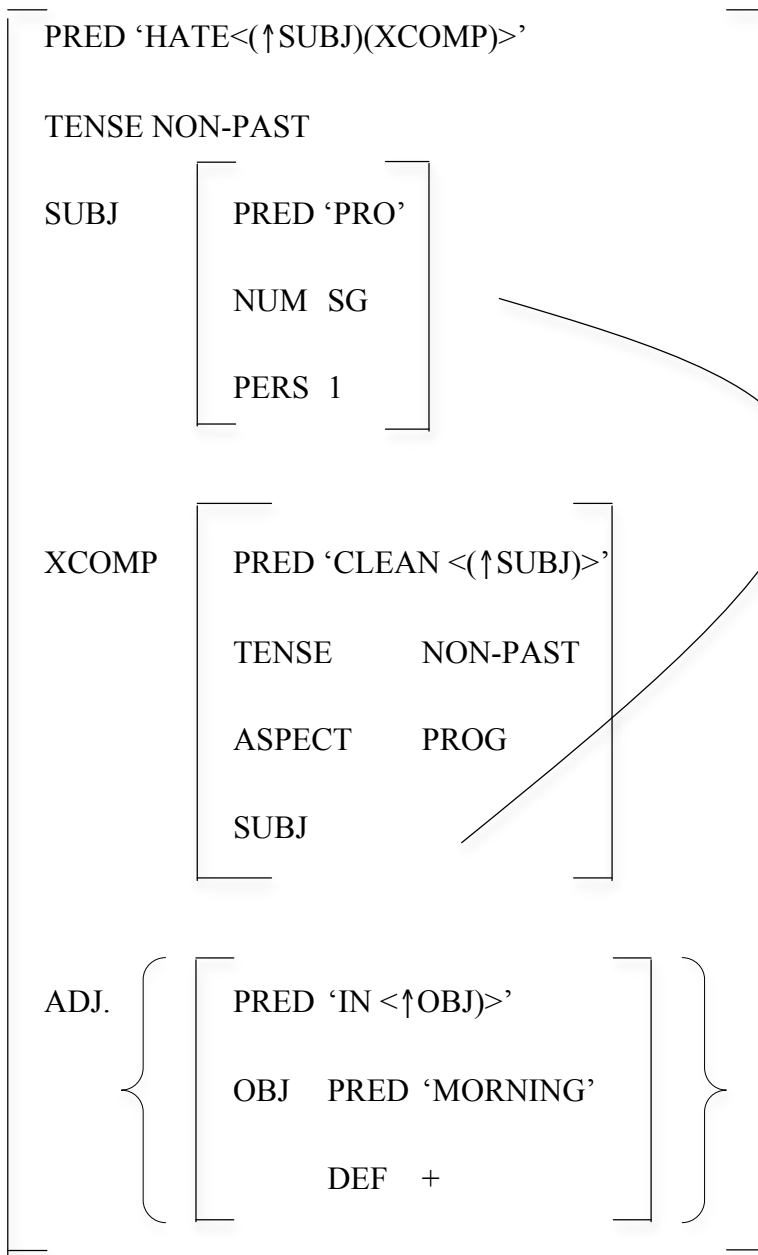
As we can see from the tree in (2), the lexical units are already inflected when appearing in the tree, and there are no empty categories¹⁶. Each of the nodes in the c-structure tree corresponds to an f-structure to which we now turn. In the following, we will see that the derivations and the movement transformational theories dealt with in the tree, LFG account for in f-structure.

5.3 F-structure

F-structure is more universal and more abstract than the other levels (Lødrup 2008:2). In f-structure we can see the features of a word. The fact that the features in a word are “invisible” in C-structure and visible in F-structure makes the distinction between syntax and morphology more cogent in LFG than in traditional transformational theories. F-structures are attribute-value matrices (AVMs) where the values are atomic entities, i.e. the ultimate element of syntactic analysis, or smaller f-structures (Falk 2001, 126:57). This is the f-structure of (1):

¹⁶ There are LFG linguists arguing for the possibility of ‘gaps’ in the c-structure tree (Lødrup, 33), however this is not relevant for the purpose of my analyses.

(3)



The PRED feature represents the actual lexical semantic content of all functions that receive a thematic role (see the Completeness Condition below), so that meaningless and non-thematic arguments do not have their own PRED feature (Falk 2001, 126:62). This can be observed in the adjunct in (3), as the lexical item ‘the’ is only represented by the feature DEF. In f-structure, one and the same AVM must contain both the governing PRED and the governed argument functions. The most basic grammatical functions in LFG are the argument

functions, since the most basic function that syntactic elements serve is to express arguments of predicates (Falk 2001, 126:57). The most common argument functions are SUBJ, OBJ, OBJ2, and the OBL group of functions, namely POSS and COMP. The latter is used as argument CPs and IPs, like ‘cleaning’ in (1). The f-structure (3) also contains a representation of the phenomenon known as functional control, where the subject of the main verb and the subject of the XCOMP are one and the same (Lødrup, 17).

In (1), there is one adjunct, i.e. a non-argument: *in the morning*. The non-arguments include ADJ., TOPIC and FOCUS. The brackets in (1) indicate that the adjuncts of a sentence are treated as a set, i.e. there are no restrictions on the number of adjuncts (Lødrup, 4). It is characteristic of LFG that it treats topic and focus as grammatical functions. However, they must always be identified with another grammatical function in f-structure, which makes them different from the other functions (Lødrup 2008:4). This treatment of non-arguments means that for example, topics are connected to the rest of the clause, not structurally separated from it, as claimed by Liddell (Liddell 2003) (see section 3.4.1).

The Completeness Condition and the Coherence Condition have important implications on the level of f-structure. It is actually impossible to use these conditions at the level of c-structure, since the only thing that can motivate the existence in c-structure, is an actual realized lexical item. This is an important difference from traditional transformational theories, because it means that there is no motivation for having empty nodes in the c-structure tree, and consequently the tree is not where the syntactic derivations take place. However, they can be seen as having roughly the same effect as GB’s Theta-Criterion (Chomsky 1981, 36)¹⁷. Falk (2001:63) formulates them like this:

a. Completeness Condition

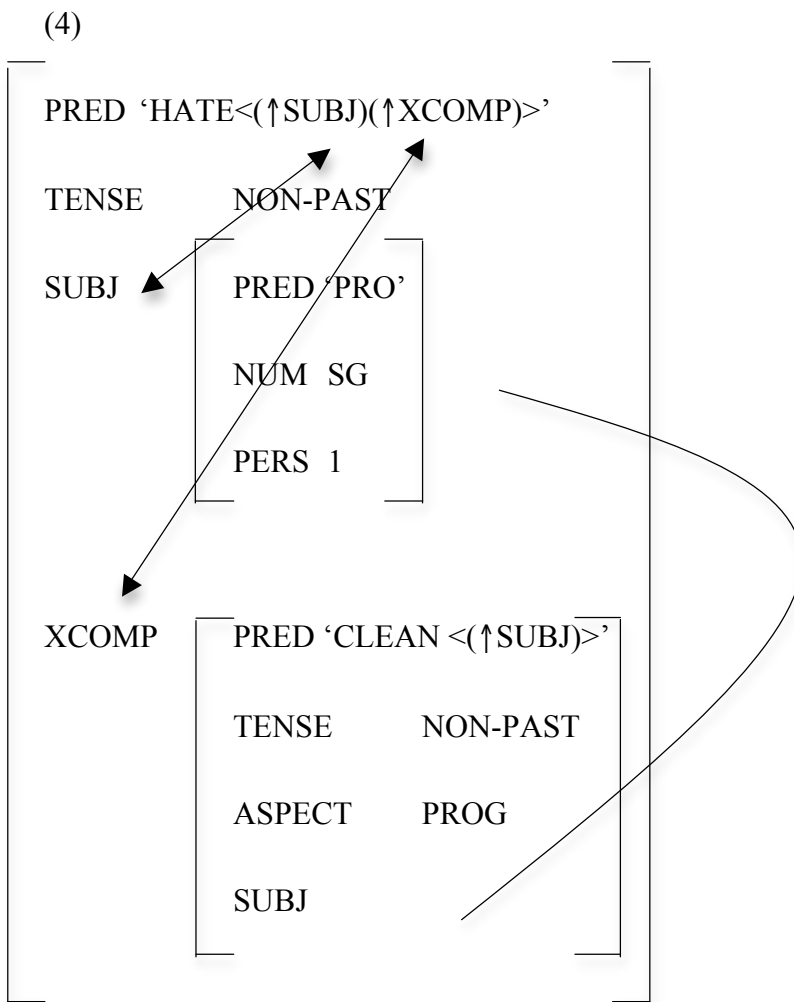
All argument functions specified in the value of the PRED feature must be present in the local f-structure. All functions that receive a thematic role must have a PRED feature.

¹⁷ Each argument bears one and only one theta-role, and each theta role is assigned to one and only one argument (Chomsky 1981, 36).

b. Coherence Condition

All argument functions in an f-structure must be selected by their local PRED. Any argument function that has its own PRED feature must be assigned a thematic role.

These conditions can be demonstrated with part of the f-structure (3). Below is only the arguments of (3), repeated as (4). The arrows show how all the argument functions selected by the head (HATE) actually appear, and thus make the f-structure *complete* and *coherent*:



All argument functions selected by the head are present, and no argument function is present that is not selected by the head.

Unification is a central concept of feature-based approaches to syntax such as LFG, as it entails the merging of feature structures. By unification we can in f-structure represent together features that belong to a single conceptual part of the syntactic structure of the sentence even if the features come from several places in the c-structure. In f-structure it is not important how the features are actually realized. This is how it is an abstract level of representation. With this approach, agreement comes as an automatic result as feature-checking is part of unification. Much of what is modeled by movement in transformational theory is modeled by unification in LFG (Falk 2001, 126:17). In terms of phrasal projections, this means that a lexical head and its phrasal projection correspond to the same piece of f-structure, and their features unify. In LFG there is no need to stipulate a mechanism for passing features from head to projection as it is a consequence of the functional identification of head and projection (Falk 2001, 126:36).

However, two distinct PREDs in the f-structure cannot unify, as it would not place the necessary restrictions on the uniqueness of arguments (see Coherence Condition above). If the PREDs were able to unify, there would be no reason why (5) would be ungrammatical, because the two occurrences of *the dog* would unify into one subject in the f-structure (Lødrup 2010, P.C.):

(5) *The dog runs the dog

We will see that the PREDs of a clause being unable to unify in f-structure will provide us with a challenge in the analyses of the verb sandwich constructions in NSL.

5.4 A-structure

A-structure represents the argument structure of the predicates. The arguments can be identified by thematic roles (Agent, Patient, Theme, Goal, Source, Experiencer, etc.) (ibid.:101). This is the a-structure of ‘hate,’ as it appears in (1):

(6) *hate* <experiencer theme>

A-structure is an intermediate lexical representation through which c-structure and f-structure maps¹⁸ (Falk 2001, 126:100). The importance of the a-structure level increases, as LFG is a theory without syntactic transformations, i.e. all levels of structure exist simultaneously in different dimensions (ibid.:66). This means that valency alternations are accounted for by requirements of differing a-structure representations in the lexicon. Hence, the verb *eat* needs a lexical entry for its use in both of the following sentences:

- (7) He ate the cake
eat <agent theme>
- (8) The cakes were eaten
eaten <theme>

The verb is then ready to be extracted directly from the lexicon into the linguistic constructions without having to go through transformations. This is how LFG can be described as a non-transformational theory.

With regards to sign language research, Sandler and Lillo-Martin (2006) have made the following statement: “Adopting a particular theoretical approach is often very illuminating, as it enables the researcher to ask and address questions that a less formal approach might miss completely” (Sandler and Lillo-Martin 2006, 287). LFG is a formal theoretical approach, so adopting this framework will provide the tools needed to address questions that have not yet been focused by the NSL linguists.

5.5 Nonconfigurationality

Configurational languages are languages in which the conceptual units are expressed by means of a phrase structure. These are the most common in Germanic and Romance languages. Nonconfigurational languages are languages in which the phrases are not essential

¹⁸ The mapping is accounted for by means of Lexical Mapping Theory (Falk 2001, 126:101ff). This will not receive further focus in my thesis due to the scope of my project.

to the expression of conceptual units (Bresnan 2001). In these languages, it is the morphology that identifies the argument functions (Nordlinger 1998, 69)

The main motivation for a theory like LFG was the observed features in so-called non-configurational languages. However, Nordlinger (1998) proposes a different typological approach. Instead of operating with absolute classifications, she finds that it is possible to talk about degrees of (non)configurationality. “(Non)configurationality is not so much a property of languages as it is a property of constructions”. We will see that the verb sandwich constructions in NSL are examples of nonconfigurational constructions. Following Nordlinger (1998), I will limit my claims to the verb sandwich constructions in NSL, i.e. my claims do not apply for NSL in general.

Analyzing the verb sandwich constructions in NSL with the tools of LFG can only be done to a certain extent at this stage. As has been pointed out earlier, this kind of data has never before been described for NSL, and hence the analyses can only serve as a starting point. Especially with regard to c-structure, it is important to bear in mind that NSL’s sign order and hierarchical relations have not been investigated in any detail. Schröder (2006) assumes SVO to be the basic order (Schröder 2006, 87), based on results from research on other sign languages: “Norwegian Sign Language has until now mainly been perceived as an SVO language, like other western sign languages (...) (my translation)¹⁹ (ibid.) However, Erlenkamp (Erlenkamp 2009b) claims for NSL that it does not have one basic sign order but several. The issue of basic sign order will not be accounted for in this thesis, as reflected in the c-structures proposed in the analyses. Consequently, these structures cannot be regarded as anything but temporary suggestions, hopefully to be used as starting points for future research.

The problems presented above lead to the introduction of S. Following Nordlinger (1998), I will make use of an exocentric nonconfigurational phrasal category S, which is defined with the following equation:

$$(9) S \rightarrow C^*$$

¹⁹ ”Norsk tegnspråk har til nå i hovedsak vært oppfattet som et SVO-språk i likhet med andre tegnspråk i Vesten (...)

In some languages, the syntactic functions cannot be identified by phrase structural configuration. Instead they are associated directly with features carried by words (Bresnan 2001, 110). The equation in (9) states that S need not have a head of its own category, the head may be V, N, A, VP, NP, AP or other, i.e., there are no predetermined functions assigned to positions within S (ibid.). At first glance, one can get the impression that the languages dealt with through such an equation must be rather anarchistic, in that anything can have any grammatical function. However, the possibilities are constrained by the information projected from other places, e.g. morphological information and lexical entries. Considering the whole system, there are rules to follow, albeit different from the more familiar syntactic ones.

As we have seen, the nonprojective category S is chosen for languages in which the phrase structure configurations do not predict syntactic functions. Some claims have been made regarding the phrase structure configurations of signed languages (Neidle 2000; Pfau 2002). Given the fact that syntactic investigation in NSL is only just at the starting line, I will not make any claims of the existence of an IP or VP in NSL. As for the former, the absence of such a category in NSL has been assumed²⁰ (Selvik 2006). As for the latter, it is simply a question unexplored for NSL. It should be noted, though, that as for the sign languages in which the clause structure is investigated, VP is widely assumed to exist (Neidle 2000; Lillo-Martin and Sandler 2006; Pfau 2002). However, as we shall see, the investigation of the verb sandwich constructions does not make the notion of a VP a matter of course. Thus, the choice of S is not so much due to the rejection of phrase structure configurations as to the lack of syntactic research in NSL. Again, I would like to emphasize that S is not chosen due to a claim that NSL is a nonconfigurational language as a whole, the claim is that the verb sandwich constructions found in NSL display nonconfigurational properties.

5.6 The modality effect and the autonomy of syntax

We have seen that in LFG, as in generative theories in general, the need for different levels of representation is assumed. However, as we saw above, the different levels in LFG, were motivated by the observed differences between languages, not by the contrast between syntax and other levels within a language. Giving a syntactic analysis, I need to decide whether it is

²⁰ Selvik does not operate with IP's, as she claims there is no indication that NSL has grammatical tense.

reasonable to treat the level of syntax as autonomous, or if for example the morphological and phonological level needs to be taken into account. In this section I will present my view on to what degree syntax can be regarded as an autonomous level, and in what areas I find it necessary to comment on issues that are not directly related to syntax.

The syntactic level received a whole new perspective already on the first page of Chomsky's revolutionary *Syntactic Structures* from 1957: "Syntax is the study of the principles and processes by which sentences are constructed in particular languages" (Chomsky 2002, 1). Where syntactic issues had been partly ignored by earlier structuralists due to the fact that syntax is difficult to structure, Chomsky now took a different viewpoint. He spoke of the complexity and creativity of language, and he acknowledged the intuition of native speakers licensing their opinions in a way that was different from the structuralist approach (ibid.:2).

We have seen that signed languages occur in the visual-gestural modality. A widely debated issue is whether or not the modality of signed languages makes them linguistically different from the spoken languages. At the level of phonology, the difference is obvious: the meaningless units in signed languages do not consist of sounds, but of hand configurations, movements and facial expressions (the nonmanual components). As for the level of syntax, there are researchers that have reached the conclusion that the modality does not affect the signed languages in terms of making them different (Rathmann and Mathur 2002, 399). Lillo-Martin (2002) explicitly links the autonomy of syntax to the possibility of treating this level of the grammar on its own terms:

Even though the phonological components for signed languages and spoken languages must reveal their modalities to some degree, the theory of the autonomy of syntax allows for a different claim about that level of the grammar. This is not to say, of course, that any particular sign language will have the same syntax as any particular spoken language. Instead, I assume that the abstract syntactic principles of UG apply equally to languages in the signed and spoken modalities. Where UG permits variation between languages, sign languages may vary from spoken languages (and from each other). Where UG constrains the form of spoken languages, it will constrain sign languages as well (Lillo-Martin 2002, 243).

For this thesis I will assume that the level of syntax can be dealt with autonomously, and consequently, I can make assumptions for the level of syntax that will not necessarily hold for the other levels of grammar. Following for example, Lillo-Martin (2002) and Rathmann and

Mathur (2002), I will assume that for the level of syntax, there is no need for a modality-specific tool, as the syntactic principles of UG can be said to hold for signed languages as well as for spoken languages.

6 Methodology

6.1 Background

The language communities of sign language users are unique in that only a relatively small group within the community has acquired their language natively from deaf signing parents. While there are currently no figures available for the NSL community, it is as low as 5-10% for the users of ASL (Neidle et al. 2000, 9). This makes the situation somewhat unusual for linguistic research. Deaf people are a minority, living in a hearing world, and a natural consequence of this will be that the language surrounding them will influence the sign languages. Like bilingual groups in general, code-switching will be a natural part of communication among the deaf, and the sign language researcher will have to be aware of this effect (Neidle et al. 2000:9). This situation was already recognized in the very first analysis of any sign language, ASL: “The bilingual person may only in an occasional slip of the tongue superimpose the patterns of one language on another, but two languages that can be used simultaneously may be more strongly drawn into syntactic conformity” (Stokoe 1960, vol. 8). We will see an example of how this “syntactic conformity” can be carried out below.

Sign languages have also, like the most minority languages, gone through a period of oppression (Svein Arne Peterson 2006, 71), with the result that negative attitudes toward sign language might still be internalized in parts of the Deaf community (Kermit 2006, 48). Therefore there will be an additional risk that the informant might switch to the Norwegian code while talking to a hearing MA-student. Another aspect of the situation of the sign language community is that deaf people have recently gained better access to speech and written language, due to today’s educational methods as well as better technical hearing aids (Vonen 2006, 148). Given the above, all this has to be taken into consideration when exploring a sign language.

6.2 Detecting grammatical elements in Norwegian Sign Language

Explicit discussions about criteria for identifying grammatical elements in Norwegian Sign Language are hard to find. We have seen discussions concerning the use of space (section

3.3.1) and how the nonmanual components are to be treated (section 3.4.2) for other sign languages. The intuitive assumption from early sign language research was that signed languages had to be profoundly different from spoken languages, given the employment of the hands, face and body as articulators. However, significantly, this assumption was often found to be misleading, as the investigators, contrary to their hypotheses, found profound similarities to the spoken languages in structure and organization (Padden 1988a, 251).

Several studies have been conducted aiming to find out whether grammatical theories are modality-dependent (McBurney 2002). We have seen that the notion of classifiers is one of the phenomena that have received attention in this respect (see section 4.3). A contribution to this discussion comes from NSL research (Erlenkamp 2009a), and can serve as illustrative of the situation that the categorization of grammatical and non-grammatical elements can be difficult for signed languages. Applying the mental space theory (developed by Liddell 2003 for ASL) from cognitive linguistics, Erlenkamp (2009) claims that the most fruitful approach in gaining insight into the classifier construction (she calls them depicting verbs) is to investigate the iconic mapping found in these constructions. From this approach, she reaches the conclusion that the classifier constructions, more similar to gestures than to lexicalized signs, should be placed in an intermediate category between gestures and verbs (Erlenkamp 2009a, 33), as they “share some basic cognitive principles of iconic mapping with speech accompanying iconic gestures, while at the same time being integrated parts of sign language grammar” (ibid.:1). This result can serve as an excellent example of how there seems to be interference from for example, the area of gestures when detecting grammatical elements in signed languages.

Given the situation that these principled discussions are yet to be fully carried out for NSL, we need to draw on experiences from sign language research in general. We have seen that in the pursuit of modality-effects, i.e. the question whether or not we need to add modality-specific tools when investigating the grammatical structures of signed languages, the use of space as grammatical is a controversial subject. Assuming the autonomy of syntax (see section 5.2) and the use of space as belonging to the morphological level of signed languages (see section 3.3.1), I can consequently rule out the discussion of how to treat the use of space. Therefore, detecting grammatical elements in NSL will be attempted on the basis of syntactic principals from spoken language research.

6.3 Data and informants

My study draws on two sources of data. One is videotaped interviews with two female, adult native speakers of Norwegian Sign Language, while the other is interviews with the informants in which the researcher consulted the informants with manipulated versions of their uttered verb sandwich constructions, collected from the two interviews. The consultants of the latter source were the same two informants who were interviewed.

The informants are native speakers, one has deaf parents, and one has hearing parents. They both work in places where they have deaf colleagues, and they are active members of the deaf community in Norway. They both went to deaf schools when they grew up, and they are both old enough to remember “oralism” as educational method (see section 2.1).

The original interviews are approximately thirty minutes each, recorded with only the informant and myself present. This situation is not optimal, as the presence of another deaf person could have helped avoid the code switching, which often occurs automatically when communicating with hearing, non-native signers. Consulting the informants after the interviews, they both commented on instances where they found their language to be influenced by Norwegian. I have left out the examples that are most influenced in this way. However, I found one interesting example in which the lexical choice is influenced by Norwegian, while the syntactic structure is like the other verb sandwich constructions:

- _____i
- (1) IX_{pro} TAKE_iOFTEN BEFORE BECOME DIRTY
- ______i
- TAKE[asp:cont]_i CLEAN[asp:cont]_i
- ‘(The windows) I clean them often, I clean them before they get dirty’

The expression *å ta vinduene*, (to take the windows), meaning *to clean the windows*, is a typically Norwegian expression that is not common in NSL. The informant commented that

she probably would only use the verb CLEAN, if speaking with another deaf person²¹. Still, the pattern is as in verb sandwich constructions: TAKE occurs twice, once before the sentential adjunct, and once after. Thus, this seems to be an instance where the code switching is simultaneous: The verbs are from the Norwegian lexicon, while the syntax is from NSL. This is specifically commented on in the analysis.

I found the consultation with the informants after categorizing the data most enlightening. We discovered both nuances that I missed as well as straightforward misunderstandings. Having checked all transcriptions and translations of examples in the analysis with both informants was therefore necessary for the accuracy of my analyses.

Ideally, the videotapes should be made publicly available so that everyone could assess the original data material for themselves. Due to limitations both with regards to time and resources, this is not the case for this study. The absence of a deaf interlocutor in the interview situation may also weaken the quality of my data. However, I found that for a study of this scope, the present material and methodology suffice to present a phenomenon for NSL never previously described. These descriptions can thus serve as one step further along syntactic description of NSL.

6.4 Notational Conventions

Since syntactic structures are the prime focus of this study, detailed phonological descriptions of every sign (hand shape, orientation and movement) will not be provided. When necessary, the utterances will be represented by a so-called score transcription (Erlenkamp 2003:122), where the different parts of a sign (manual and nonmanual) produced simultaneously can also be represented simultaneously by the different tiers of the transcription. However, the nonmanual marking will only be represented in the transcription when necessary for my analysis. For example, there may be an eye gaze omitted from my transcriptions, which I consider to be outside of relevant syntactic information, even though it is directed toward something other than the interlocutor. The eye gaze that I use as evidence for clause

²¹ Based on the informant's assessment of this utterance, I will treat this example (4) as an instance of code switching. However, it could also be that the expression *to take the windows*, has become an integral part of NSL, and is therefore not an example of code switching any more, but a loan. Since the contact and influence between Norwegian and NSL is outside the scope of my thesis, this will not be investigated further.

boundaries will naturally be transcribed, as well as eye gaze toward referential loci. The latter is exemplified in (2):

(2) $\overline{\quad\quad\quad}_i$ $\xrightarrow{\quad\quad\quad}_i$ $\xrightarrow{\quad\quad\quad}_i$
 IX_{pro} READ_i READ[asp:cont]_i SEE_j THINK MOVIE SEE_j

FIRST

In (2), there are two loci established; the referent being read, and the referent being seen. This is reflected by use of subscripts i and j, respectively, as can be seen in (2).

Nonmanual negation will naturally be transcribed, as it is often the only marking of negation in a sentence. In (3), the overline represents the domain over which the nonmanual negation (headshake) is marked (see list of notational conventions):

(3) IX_{adv} REALLY IX_{PRO1p} TAKE LONG[adv:intens] $\overline{\quad\quad\quad}_{neg}$ QUICK NO

LONG

‘It really takes me a long time’

(From NSL data for this study)

Nonmanual question marking can be both raised and lowered eyebrows. Either way it will be transcribed as in (4)(here, the eyebrows are lowered):

$\overline{\quad\quad\quad}_{Q:wh}$
 (4) HOW-MANY

‘How many?’

(From Norwegian Sign Language Dictionary)

The hyphen indicates that (4) is uttered with a single sign.

I will let the Intonational Phrases (see section 3.4.2) guide me while deciding what I will define as clauses in the syntactic analysis to come. However, the prosodic cues defining the intonational phrases cannot always be trusted, as will be discussed in the concluding chapter. For now, observe that while the prosodic markers are guiding, they cannot be defining.

As for the classifier constructions, we have seen that they have extra lexical information incorporated in addition to the verbal action, i.e. for (5) SMOKE (see section 4.3). This information will be represented in the glossing of the classifier constructions:

(5) SMOKE-A-CIGARETTE

In the following, the verb sandwich constructions from NSL will be presented and analyzed.

7 Verb Sandwich Constructions in Norwegian Sign Language

7.1 Introduction

As we remember from section (2.4), Fischer and Janis (1990), describe the verb sandwich construction in the following manner: “(...) a construction in which the same verb (or two verbs with highly similar roots) occurred twice in the same sentence, separated only by the object and/or sentential adjuncts” (Fischer and Janis 1990, 281). Following Matsuoka (see section 4.5), I will divide the verb sandwich constructions (VSC) in this chapter into two main categories: The aspectual verb sandwich constructions (AVSC) and the lexical verb sandwich constructions (LVSC). An example of both types is provided below:

Aspectual Sandwich Constructions:

- (1) IX_{pro1p} SIT INTERPRET CNN HEAR (IX) INTERPRET[asp:cont]

‘I interpreted from CNN (what I heard.)’

Lexical Sandwich Constructions:

- (2) IX_{PRO} SEND SMS SEND-FROM-CELLPHONE[cl:handle][asp:cont]

‘She sent me an SMS’

I have several examples in my data to illustrate both types. However, we will see that the AVSC category can be further divided into two subcategories with distinct functions.

Fischer and Janis (1990:285) put forth four questions that they claim need to be addressed in any complete analysis of VSCs. Since LFG is a theory without syntactic movement, the last question needs a thorough discussion that we will only begin to address with the concluding remarks in the last chapter. The four questions are the following:

1. What kind of morphological and syntactic information contribute to the “heaviness” of the verb, and at what point does a verb become too heavy? (see section 4.5)
2. What accounts for the ordering restrictions between the two verbs?
3. What information can go with which verb?
4. How are the verb sandwiches to be derived?

Fischer and Janis (1990) do not provide any answer to the last three questions, only the first. They find that “sandwich constructions have two verbs for a variety of reasons, including depth of embedding, “too many” inflections, or too many arguments” (Fischer and Janis 1990, 287). They take into consideration the fact that there are different types of verb sandwich constructions, although they don’t systematize them into distinct categories.

However, Matsuoka (1999) does this by explicitly pointing out that the aspectual and the lexical verb sandwich constructions need separate analyses, due to the fact that the LVSCs express additional lexical information, as in (3)²². The additional lexical material in this example is BROOM and FLOOR (reflected in *plural location*):

(3) H-A-R-O-L-D SWEEP[shape cl:B] FLOOR USE-BROOM-AROUND[handle cl:S-on-S:plural location]

‘Harold sweeps up the floor (with a broom)’

(Fischer and Janis 1992, cited in Matsuoka 1999)

²² The notational system is not accounted for in Matsuoka (1997). I will however provide an explanation based on conventions for readers who are not familiar with sign language transcriptions. The hyphens in H-A-R-O-L-D reflect that the name HAROLD is spelled out. *Shape cl* is probably similar to the Size and Shape classifier (described in section 4.3). *B* is a description of the hand configuration. The B-hand shape is conventionally a flat hand. *Handle cl* is the same term as handle classifiers used in this thesis. *S-on-S* is a description of the hand shape. S-hand shape is conventionally a closed fist, so one hand holds on the other as if they were holding a broom. *Plural location* is where the broom is used; on the floor, but not in a fixed point.

Following Matsuoka (1997), (see section 2.3.2) As we have seen, I will assume that the argument ‘floor’ and the adjunct ‘with a broom’ are incorporated within the classifier verb USE-BROOM-AROUND[handle cl:S-on-S:plural location]. Hence, the argument (the floor) represented as incorporated within the classifier is not reflected as an independent lexical unit, but still needs to be represented in the syntactic analysis. As we will see, this is not a problem within the framework of LFG.

The distinction between aspectual and lexical verb sandwich constructions has some problems that need a comment. Despite the fact that I will treat these different verb sandwich constructions as part of distinct categories, we shall see that the categories could be regarded as extremes of a continuum. For example, the aspectual marking characterizing the first category is in fact also occurring with the lexical SCs, as in (2). Thus the aspectual marking is not exclusively occurring with the AVSCs. In addition the AVSCs may also convey information of non-overt referents through eye gaze, as in (4). The eye gaze indicated over the first verb READ is directed toward the referent being read, i.e. the book, which is not lexically expressed in the clause:

- _____i
- (4) IX_{pro} READ_iREAD[asp:cont]
 ‘While she was reading (...)’

The difference between the categories lies in the second verb. With the aspectual VSCs, it is the same verb occurring twice; in the lexical VSCs the second verb is realized by a different sign, i.e. a classifier verb. As I cannot go further into the details of the relationship between the two categories in this thesis, it will be sufficient to state that the terms aspectual and lexical verb sandwich constructions still reflect differences between the two categories and as a result they can serve as apt labels.

In the following I will explore the syntactic properties of the VSCs. We will see that we are actually dealing with some different patterns, demanding different analyses. In terms of LFG, one main task will be to find out whether the VSCs contain one or two PREDs in f-structure. We have seen that PREDs are the one thing that cannot be unified in f-structure (see section

5.2), and will thus provide us with obscurities in some of the constructions, while it will provide more traditional analyses with others.

As I will adopt the distinction between the lexical and the aspectual sandwich constructions made by Matsuoka (1997), the two main categories are dealt with separately in the following.

7.2 Aspectual Verb Sandwich Constructions

One of the two main categories of VSCs identified by Matsuoka (1997) is the ‘aspectual sandwich,’ in which the same verb is occurring twice but only one carries the [asp] marker (Matsuoka 1997, 129). As Matsuoka’s focus is the verb raising operation, she is not concerned with the filling of the sandwich. In the original analysis of Fischer and Janis (1990), they suggest that objects and/or sentential adjuncts may be sandwiched (Fischer and Janis 1990, 281) (see section 4.5). In the following, while presenting the data from NSL, we will also be concerned with the form and the function of the material constituting the filling in the sandwich. In the last section of the presentation of the AVSCs, I will present one type of VSCs not described by Fischer and Janis (1990) or Matsuoka (1997), the verb sandwich construction with aspectual marking on both verbs. Before presenting the data from NSL that represents a new contribution to the description of VSCs, we will look at the more traditional type of AVSCs.

7.2.1 Aspectual marking on the final verb

We have seen that the data from Fischer and Janis (1990) includes verb sandwiches without any fillings, as does the NSL data:

- _____i
- (4) IX_{pro} READ_iREAD[asp:cont]_i
 ‘While she was reading (...)’

- _____i
- (5) MOTHER STAND DO-DISHES_i DO-DISHES[asp:cont]_i
 ‘While the mother is doing the dishes (...)’

As the translations reflect, these clauses are part of a larger sentence, to which we will return later. For now we will observe that the first verb is unmarked, with a mouthing, while the second is marked for aspect, with a mouth gesture. In this respect, the examples above represent prototypical VSCs, as described by Fischer and Janis (1990). We can thus confirm their observation that the filling in a VSC is optional.

In the next examples we will see what the filling can consist of, starting with an object:

- (6) IX_{pro} READ BOOK READ[asp:cont]
 ‘While she was reading a book (...)’ (elicited data)

The next example shows adjuncts as filling. In (7), OFTEN and BEFORE BECOME DIRTY are both adjuncts:

- _____i
- (7) IX_{pro} TAKE_i OFTEN BEFORE BECOME DIRTY
 _____i
TAKE[asp:cont]_i CLEAN[asp:cont]_i
 ‘(The windows) I clean them often, before they get dirty’

When confronted with (7), the informant reports that the choice of the verb TAKE is influenced by Norwegian (see section 6.3). Interestingly though, even in an utterance highly

influenced by Norwegian at the lexical level, we can still identify the same syntactic pattern: The Norwegian verb *ta* (take), influences the choice of the verb glossed as TAKE[asp:cont], which is accompanied by an eye gaze, while the last verb CLEAN[asp:cont], which is a genuine NSL sign, is accompanied by a slight mouth gesture. (7) is thus an example of code switching, however, the code switching seems to be occurring simultaneously (see section 6.3). Norwegian influences the lexical choice while the NSL syntactic pattern is obvious; the verb could not be repeated in this manner in spoken Norwegian²³.

The following examples are cases in which we can find both an object and an adjunct:

- (8) IX_{pro1p} SIT INTERPRET CNN HEAR(IX) INTERPRET[asp:cont]

‘I interpreted from CNN (what I heard.)’

We have seen that the sign HEAR(IX) will be treated as a pointer buoy in this clause, not as a verb (see section 2.2.3). The reason why it is glossed HEAR(IX) is due to location of the pointing; it is directed toward the ear. The first verb INTERPRET is accompanied by a mouthing, while the second verb INTERPRET[asp:cont] has a mouth gesture: the lips make a slight movement upward (see section 2.2.2). We will see that there is a certain variation concerning the nonmanuals accompanying the verbs in a VSC. In the next example, the mouthing is accompanying both verbs, but there is an eye gaze directed toward the locus established for the referent NEWSPAPER that serves as part of the aspect marker:

- (9) READ NEWSPAPER_i DAY AFTER IX_{pro1p} READ[asp:cont]_i

‘I read the newspaper the next day’

²³ By introspection.

The examples we have seen so far, display the possibilities that the filling consists of an object, an adjunct or both an object and an adjunct. The filling might also be omitted. Concerning the verbs, we can identify a fairly consistent pattern: the first verb in the VSC is unmarked and accompanied by a mouthing. The final verb in the VSC is marked for aspect with a mouth gesture in addition to the change in movement. However, in (9), the last verb was also accompanied by a mouthing, but had an eye gaze fixed toward the object. The mouthing is, as we have seen, influenced by the mouth position of the Norwegian spoken word, and can be occurring in (9) due to code switching. The latter hypothesis needs more investigation before conclusions can be made.

We have also seen, as observed by Matsuoka (1997) that the order of the two verbs is consistent; it is always the last verb carrying the aspectual marker, which in the cases above expresses imperfective aspect.

7.2.2 Aspectual Verb Sandwich Constructions with adverbial marking

The VSCs may in addition to the aspectual marking also have an adverbial marking on the sentence-final verb (see section 2.2.4). In (10) we find again that the filling consists of an adjunct:

(10) IX_{pro1p} WAKE-UP TIME FIVE MORNING WAKE-UP[asp:cont][adv:hard]

HARD

‘I had to wake up at five, and it was really hard getting up.’

Note that there is a lexical adverb in addition to the facial marking in the sentence final position: HARD. This could serve as evidence that the facial marking is nothing more than an emphatic facial expression. However, the adverb is optional in this sentence and the adverbial interpretation would be retained even without this overt adverb. Thus (10) has the same meaning as (11):

- (11) IX_{pro1p} WAKE-UP TIME FIVE MORNING WAKE-UP[asp:cont][adv:hard]
(Elicited data)

The last example in this section is one in which there is an intonational phrase boundary right after the object NEWSPAPER. The signer actually takes a good pause after READ NEWSPAPER²⁴, which is good reason to treat this as one independent clause, and consequently (12) is not an example of a VSC²⁵. If this is the case, it means that READ[asp:cont][adv:enjoy] can serve as an example that verbs marked for aspect and adverbial can appear alone, and (12) is still interesting. However, there is one alternative analysis of (12). We remember from section (3.4.2) that Sandler and Lillo-Martin (2006) described several types of clause boundaries, one of which was the parenthetical type. It is possible to interpret ENJOY SATURDAY as a parenthetical remark and thus treat (12) as one clause. Bearing the two possibilities of interpretation in mind, I will in the following treat (12) as a VSC. The adverbial marking conveys information that the newspaper is read with pleasure. This information is also expressed lexically, although this time in the filling of the sandwich (ENJOY):

- _____i
- (12) READ NEWSPAPER_i ENJOY SATURDAY THICK_i
READ[asp:cont][adv:enjoy]

‘I read the newspaper, enjoying the thick newspaper on Saturday.’

We have seen that the final verb in a VSC can also be marked for adverbial meanings. The filling in (10) consists of an adjunct, while in (12) there is both an object, NEWSPAPER, and an adjunct, ENJOY SATURDAY THICK, in the filling.

²⁴ Even though there is a pause in this example, the head nod that is typical for clause boundary marking is lacking in (9).

²⁵ Confronted with this example, the informant said that this actually represents two different sentences, with a sentence boundary after NEWSPAPER.


7.2.3 Verb Sandwich Constructions as signaling a subordinate clause

(4) IX_{pro} $\text{READ}_i \text{READ}[\text{asp:cont}]_i$
'While she was reading (...)'

(13) IX_{pro} READ_i $\text{READ}[\text{asp:cont}]_i$ SEE_i THINK MOVIE SEE_i

‘While reading, she saw what she first thought was a movie.’

This example is a somewhat complex one, and it contains several phenomena. We have already seen that Lillo-Martin (1991) has observed for ASL that null arguments, both subjects and objects can occur with both plain verbs, and with agreeing verbs (see section 2.3.5). Thus we will assume that (4) is the subordinate clause of (13). Since we are dealing with (13) as one sentence, SEE and THINK could be interpreted as a serial verb construction²⁶, as they represent two distinct verbs with shared subject. However, the prosodic markers tell us that there is actually a prosodic boundary between the two verbs²⁷. The eye gaze is directed toward the object of SEE, while THINK is accompanied with a gaze toward the interlocutor - a somewhat neutral gaze. The prosodic marker confirms that the clause starting with SEE, is actually the matrix clause of (13). Thus, a more reasonable analysis, in my view, is that there are two VSCs with distinct functions adjacent to each other in this clause. The first one, we have already recognized as (4). The second one is (14):

- 
- (14) SEE_i THINK MOVIE SEE_i FIRST
- ‘(...) she saw what she first thought was a movie.’

We saw that according to Fischer and Janis’ (1990) analysis, the aspectual markings main function on the last verb is to signal the subordinate clause in which it appears. Following this analysis the aspectual marked verb READ[asp:cont] signals that (14) is the matrix clause. As for the filling of (14), this is also a subordinate clause, as reflected in the translation.

What is different with this construction is that the second verb is not marked with any aspectual information, but has extra temporal information expressed lexically. The argument for treating FIRST as a marker of SEE is again prosody. Even though they are separate signs, I would like to argue that the sign FIRST, providing adverbial information, is closely connected with the sign SEE prosodically, and should therefore be interpreted as temporal marking on the verb, as with the aspectual marking.

²⁶ A serial verb construction (SVC) is one in which a single clause contains two or more verbs, neither of which is an auxiliary (Kroeger 2004, 222). These constructions have been described for signed languages, e.g. ASL (Supalla 1990).

²⁷ One of the criteria for treating two or more verbs in a clause as an SVC is that there is no prosodic boundary between them (Kroeger 2004, 229).

We have seen examples of two VSCs appearing adjacent to each other with different functions. The first VSC in (13), signals that it is part of a subordinate clause, as described by Fischer and Janis (1992). For the second type in (14), I propose the possibility that the verb can be ‘marked’ by a lexical adverb occurring tightly connected to the verb prosodically, which leaves these kinds of VSCs in the category of the ones with aspectual marking.

7.2.4 Aspectual marking on both verbs

In the next examples, we find a different pattern. This pattern is not compatible to the descriptions provided by Fischer and Janis (1990). In these VSCs, the aspectual marking seems to be the same on each of the verbs, concerning both the eye gaze and the mouth gestures. Moreover, both of the verbs are accompanied by a mouthing. These observations lead to my treating of them as copies of the same item, i.e. one is an empty copy of the other (Poletto 2008, 38):

- (15) DO-DISHES[asp:cont]_i CURIOUS WINDOW_i CURIOUS (i.r.) DO-DISHES[asp:cont]_i

‘She does the dishes while curiously looking out of the window.’

- (16) SHEET-OF-PAPER_i CUT[asp:cont]_i PREPARE CUT[asp:cont]_i

‘I prepare (by cutting the sheets of paper).’

- (17) TYPE[asp:cont]_i PREPARE TYPE[asp:cont]_i IX_{ADV}

‘I prepare (by writing on the computer).’

There seems to be an aspect of simultaneity in these cases, in (15) there is a woman doing the dishes and looking out the window at the same time. Thus the second verb is really just a prolongation of the first, signaling that the dishwashing was going on during the looking out of the window. In (16) and (17), there is a single verb that represents the filling of the sandwich. This verb PREPARE denotes what the two other verbs are actually about. Thus, the fillings of these VSCs are just another way of saying what the sandwich verbs are conveying. I will refer to this kind of VSCs as doubling, as the properties of these verbs don't reveal any semantic distinction between the two.

For ASL and Brazilian Sign Language (LSB), doubling is identified as a construction involving focus (Müller de Quadros and Lillo-Martin 2010, 240). In most of the examples displaying doubling in this study, focus does not seem to be involved. However, toward the end of this section, we will see one example in which focus seems to be the motivation of the doubling, as described by Müller de Quadros and Lillo-Martin (2010).

In the next example, we can identify a three-layer VSC; the three-layer sandwich is among the phenomena described in the data of Fischer and Janis (1990). Observe in (18) that the two last verbs in the sentence are marked in the same way, this time for both aspect and manner (i.e. adverbial information):

- (18) IX_{pro1p. dua} WALK CALM WALK[asp:cont][adv:calm] HØYBRÅTEN IX_{adv}
WALK[asp:cont][adv:calm]

‘We went for a nice and easy walk around the area of Høybråten.’

The filling between the verbs marked in the same way is however an adverb in this case. Thus, doubling of a verb can occur without the simultaneity aspect we saw with examples (15), (16) and (17). The fact that the adverbial marking is also identical with both of these verbs, confirms why the last verb WALK[asp:cont][adv:calm] should be treated as an empty copy of the first WALK[asp:cont][adv:calm].

The last example represents doubling of a verb without any filling. However, in this case I was not able to find any reason as to why the verb is repeated. I asked both of the informants and found that they agreed that there are two instantiations of the verb SPREAD-ON to be dealt with in this example, but there was uncertainty as to why it is repeated. One suggestion was that it is simply because the informant had to make breakfast first and lunch for school afterward. However, I have not been able to reach a conclusion regarding the nature of this kind of doubling, and I will therefore leave this matter for future research:

- (19) IX_{pro1p} MAKE BREAKFAST $\text{SPREAD-ON}[\text{asp:cont}]_i$ $\text{SPREAD-ON}[\text{asp: cont}]_i$

‘I make breakfast, I spread (some butter) on (some slices of bread)’

The fact that two verbs in a VSC can be marked in the same way may serve as counter evidence against the analysis that attempts to explain the VSC due to the heaviness of the verb. There is no different inflection on the sentence-final verb in this example, it is simply repeated. However, we have seen that Fischer and Janis (1990) point out that the two verbs have many reasons for occurring in one clause. My data does not rule out the possibility that the heaviness of the verbs is one of them.

Summary

We have seen that AVSCs can be divided into two categories with distinct functions. In the first category, described by Fischer and Janis (1990) the last verb is marked for aspect (and optionally adverb), while the first is an unmarked citation form of the verb. This construction can sandwich an object, an adjunct, both an object and adjunct, or nothing.

In the other type, the two verbs are identical. I will call this phenomenon doubling of one verb, i.e. one verb is an empty copy of another. In these cases none of the verbs can be said to represent the citation form, the verbs are both inflected for aspect in the same way. Evidence

that these two verbs semantically ought to be treated as the same verb comes from one example in which there is also an adverbial marking on the verbs. This adverbial marking is also identical on both of the verbs. In Norwegian Sign Language both of these constructions can sandwich an object or an adjunct or both.

In addition to the aspectual marking, there may also be an adverbial marking on the same verb. In the examples we have seen, the adverb is expressed lexically as well as incorporated in the verb. From elicited data, it seems this overt adverb is freely omissible with the same adverbial meaning intact.

The aspectual marking of a sign is in addition to the change in movement realized by nonmanual signals; mouth gestures and eye gaze. There seems to be a relatively consistent pattern concerning the distribution of the two: The verb marked for aspect is accompanied by a mouth gesture, if not, the eye gaze seems to take over the aspect marking by being directed toward a significant locus. It is however, important to note that the eye gaze seems to have different functions in the different examples. It is not difficult to find different behaviors concerning the accompanying of eye gaze with the verbs marked for aspect. Interestingly, I have not been able to find a sentence-final verb without any marking altogether, or with a mouthing without an eye gaze. Consequently, it seems that the non-manual signals are coordinating occurrence with the verb inflected for aspect in the VSCs. A temporary conclusion can be that the last verb in a VSC will have an aspectual marking in one way or another. With respect to the first verb, it is accompanied by a mouthing in all of my examples.

7.3 Verb Sandwich Constructions in NSL – Lexical Verb Sandwich Constructions

In the Lexical Verb Sandwich Constructions we find that the final verb is a classifier in which extra lexical information is incorporated. We have seen that the extra lexical information could be arguments (see section 4.4). The multiple internal arguments make the structure in these constructions comparable to that of some spoken languages (Matsuoka 1999, 143), as we will see in the f-structures of some of the examples. We remember that the extra lexical information represented in the classifiers will be reflected in the glossing:

(20) SMOKE-A-CIGARETTE

As can be observed from the introduction of this section, I will be using the term ‘classifier constructions’ while referring to the second verb in these constructions (see section 2.3.2 for discussion).

Fischer and Janis (1992) find a possibility for “the second verb to contain a productive use of a classifier denoting the object or the instrument used in carrying out the action of the verb, often making the entire meaning of the verb more specific” (ibid.:284). Matsuoka (1997) finds reason to treat these constructions as a separate category, as will I. In the following a presentation of the LVSC found in the NSL data is provided.

In the next examples, the first verb is an agreement verb, while the second is a handling classifier. In (21) the informant is “holding” the cellphone in her hand while pushing the button to send:

- _____i
- (21) IX_{PRO} SEND SMS SEND-FROM-CELLPHONE[cl:handle]_i
‘She sent me an SMS’

- (22) FIRST IX_{PRO1P} SMOKE GO OUT SMOKE-A-CIGARETTE[cl:handle]
‘I (want to) smoke first, so I go out for a cigarette’

In these examples, the eye gaze is a different from the aspectual VSCs, in that the eye gaze toward a significant locus is always co-occurring with the classifier predicate. However, in (21) the gaze is toward the interlocutor during the first verb, while in (22) it is part of a role shift²⁸, which is why it is not represented in the transcription.

²⁸ The ‘role-shifting’ structure is for ASL described as a structure in which “the body shifts out of an unmarked position into some other location, either to the side or slightly forward

The example in (23) represents a triple deck LVSC without filling, where the context is that the signer cannot open her garage. The first verb is the citation form of the sign OPEN, while the classifier OPEN-GARAGEDOOR[cl:handle] is demonstrating the actual manner of opening her kind of garage door. The sentence-final classifier is demonstrating how she tries turning the knob around to get the door open:

- Q:wh
- _____i _____i
- neg
- (23) CANNOT OPEN OPEN-GARAGEDOOR[cl:handle]_i TRY-OPEN-
- Q:wh
- _____i
- neg
- KNOB[cl:handle]
- ‘Why couldn’t I open the garage?’

This sequence could be analyzed as a biclausal structure, or even as two independent clauses, given the fact that we can find three distinct verbs and they all contribute with new information. However, the prosody tells us that we don’t have any intonation phrase boundaries throughout this sequence and also the consistent negation marking and the question marking indicates that this is one clause. If we look at the semantics of the verbs more closely, they are all conveying information of the non-opening of the garage door. As we will see in the analysis of this example (see section 7.4.2), I will argue that the verbs in (23) are all part of a complex predicate construction.

The next examples demonstrate VSCs without filling in which both of the verbs are accompanied by an adverbial facial expression. Once again, the last verb is a classifier:

(Padden 1990, 119). One common role-shifting structure is the type that resembles “direct quotation” or “reported speech” in English (ibid.).

- (24) CLEAN[adv:intens] CLEAN-FROM-CORNER-TO-CORNER[cl:wh. entity;

 i
adv:intens]_i

'I clean the floor from corner to corner.'

- (25) WOMAN FAT RUN[adv:fast] RUN – DOWNSTAIRS-IN-

SPIRAL[cl:limb][adv:fast]

'A fat woman ran all she could down the (spiral) stairs'

- (26) SELDOM FISH BECAUSE SMELL[adv: bad] SMELL-FROM-

FISH[cl:whole entity][adv:bad]

'I seldom have fish on (my bread) because it smells'

- (27) IX_{pro} LIE POSS_{1p} BED LAY-IN-BED[cl:limb][adv:enjoy]

'The dog lies down in my bed (having a good time)'

The next example represents a triple-decker sandwich without any filling:

(28) BATHROOM HAVE PEN UNDERLINE BECAUSE²⁹ UNDERLINE

UNDERLINE[cl:handle, asp:cont]; UNDERLINE[cl:handle, asp:cont];

‘In the bathroom, we have a pen that we use for underlining (whatever program we want to see.)’

Observe that the first time UNDERLINE occurs in this example, it is not a verb, but an adjective, describing the pen. Thus we have three occurrences of the verb UNDERLINE of which the first is unmarked. The reason why the aspect marked verb UNDERLINE[asp:cont] is repeated is not easy to give a clear-cut answer to. However, it seems to have something to do with iconicity. The informant is explaining how she goes through the newspaper, deciding whether she wants to see any of the programs. As this task apparently takes a certain amount of time, this could be reflected in the two occurrences of UNDERLINE[asp:cont]. The previous suggestion is only to be regarded as a temporary hypothesis, and I will leave the investigation of several occurrences of aspect marked classifiers for future research.

Summary

We have seen that the LVSCs consist of two (or in one case, example (29) three) different verbs, one of which is a classifier. The classifiers specify the meaning of the first verb, narrowing down the possible interpretations. Incorporated in the classifier is extra lexical information. This means that the classifier does not only consist of the action denoted by the verb, but could also have information of arguments or adjuncts that need to be accounted for in the analysis.

With respect to the aspect and adverbial marking we saw in the last section, the classifiers display similar properties: the non-manuals conveying adverb or aspect can also co-occur with the classifiers.

²⁹ The sign glossed BECAUSE can be used for both purpose and cause. In this case BECAUSE is used for purpose.

The doubling phenomena reported with the AVSCs cannot be used to account for the LVSCs taking into account the fact that there are two different verbs. However, one example is found in which for some reason the classifier is repeated. I don't have any suggestions as to why this is the case at this stage.

Now we turn to the investigation of how these constructions can be dealt with within the framework of LFG.

7.4 The LFG analysis of Verb Sandwich Constructions

In this section I will argue that the aspectual and the lexical sandwich constructions need distinct analyses. In addition to this, the analyses will also reflect the two different subtypes of the AVSCs. We will see that the VSCs can be part of both biclausal and monoclausal structures and we will find that they will be treated as both syntactic doubling phenomena and complex predicates in the analyses to come. As for the C-structures, they need to be regarded as temporary suggestions due to the fact that most of empirical research remains to be conducted concerning the issue of sign order in NSL.

I will in the following show that the VSCs display the properties of a nonconfigurational, head-marking construction, namely that grammatical relations are constructed by verbal agreement/incorporated pronouns (Nordlinger 1998, 47). Note that I am only making a claim for the VSCs in NSL, not for NSL in general.

7.4.1 The Aspectual Verb Sandwich Constructions

We have seen that we can find two subcategories within the AVSCs: One in which the verbs are identical, and one in which only the sentence-final verb is marked for aspect. The analysis to come will reflect this, and this section will hence suggest two distinct LFG-analyses; one for each type.

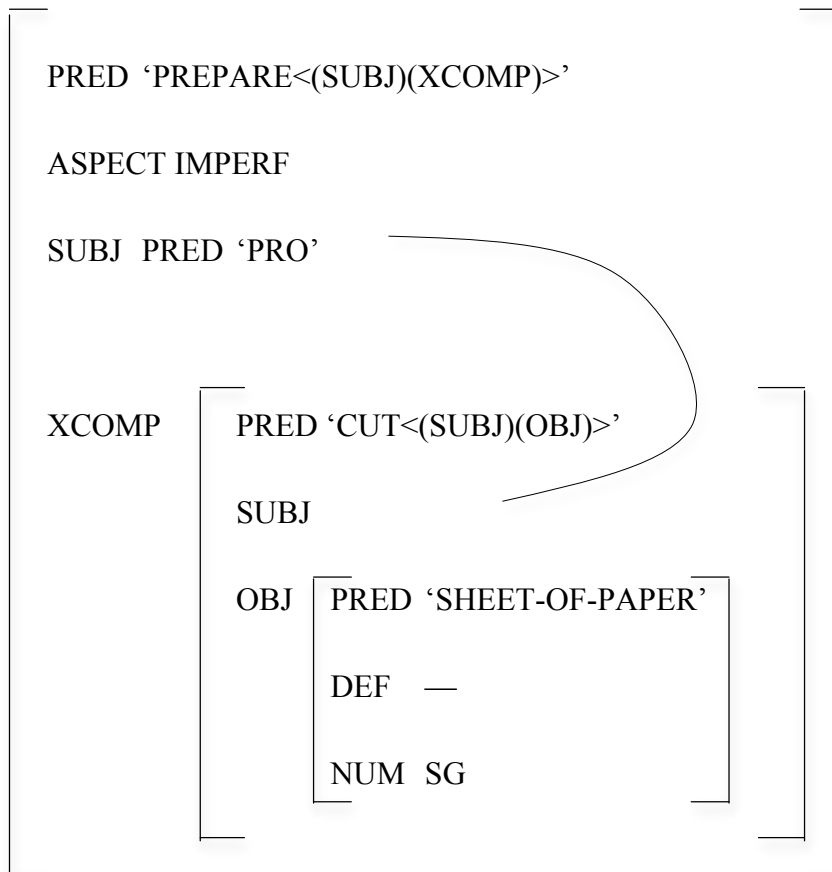
Aspectual marking on both verbs

The first sentence we will look at is one in which the second verb is simply a copy of the first, i.e. it is doubled:

- (29) $\frac{\text{SHEET-OF-PAPER}_i}{\text{CUT}[\text{asp:cont}]_i}$ PREPARE $\frac{\text{CUT}[\text{asp:cont}]_i}{\text{'I prepare (by cutting the sheets-of-paper)'}}$

In (29) the filling is not the object or an adjunct, but another predicate. This gives the following f-structure:

(30)

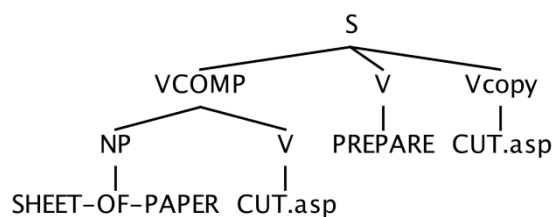


From this f-structure, we can see that (29) is analyzed as a biclausal structure, in that it contains an XCOMP. The arc reflects the structure sharing of the subject between the main clause and the subordinate clause. The biclausal structure makes this kind of verb sandwich different from the other type of AVSCs. Observe, though, that it is the filling of the VSC that makes this construction biclausal. Analyzing the second instantiation of the verb

CUT[asp:cont] as an empty copy, the sandwich verbs are interpreted as containing only one PRED, and are thus not complex in themselves.

Turning to the c-structure of (29), the two verbs in the sandwich construction require one independent node each, since they are obviously two lexical items. The marking for aspect is represented on both verbs. The tree below reflects that the clause in which the first instantiation of CUT[asp:cont] occurs is subordinate to the matrix verb PREPARE. However, there is a problem: the verb CUT[asp:cont], which I have claimed belongs to the subordinate clause, appears again in the matrix clause. Thus, the relationship between the two verbs in the VSC is an unsolved problem, and the fact that the two verbs should really be analyzed as one, is not properly reflected³⁰:

(31)



Aspectual marking on one verb

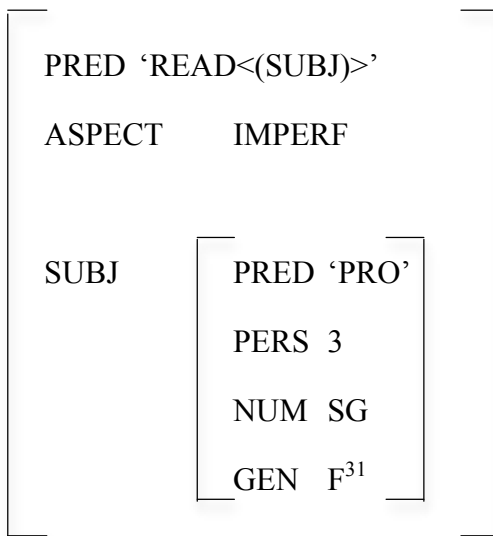
The next sentence to be analyzed represents the AVSC (without filling), where only the last verb is inflected for aspect:

- _____i
- (32) IX_{pro} READ_iREAD[asp:cont]_i
 ‘While she was reading (...)’

³⁰ Recall from (4.5.1) that there is an analysis in the framework of Minimalism of this kind of constructions for ASL, which is called the Movement Account (Matsuoka 1999, 143): “The verb moves to Agr (head-initial) and then to Asp (head-final) to license a potentially stranded Aspect morpheme. A trace of the verb is phonetically realized as a resumptive verb.” For this kind of empty copies, the Movement Analysis could be apt.

Even though these verbs are not identical, i.e., they are differently marked for aspect, they only receive one PRED in f-structure. The second verb is only represented by its marking for aspect:

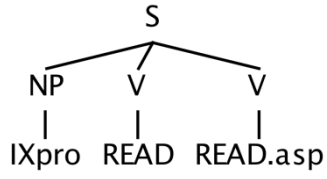
(33)



As can be seen from this f-structure, I will treat this type of VSCs as monoclausal, in that all grammatical functions are analyzed at the same level. Note that it is not possible to see from this f-structure that READ occurs twice in the actual sentence. In LFG, the concept of unification does not apply for PREDs (see section 5.3). Thus, the fact that ASPECT is the only feature represented from the second verb poses a problem. However, an argument for letting the PREDs unify anyway is that they should actually be regarded as one verb. Either way, this phenomenon demands a special treatment, the same verb is represented but with different inflection. This is not a possibility in many of the natural languages of the world. Hence, I will allow the PREDs to unify in this case and consequently analyze (32) as a simple clause. The c-structure proposed is the following:

³¹ The reason why third person (3) and gender (F) is considered in this f-structure is solely based on the mouth position of the pronoun IX sign, which differentiates F from M and second from third person. These features are not reflected in the transcription.

(34)



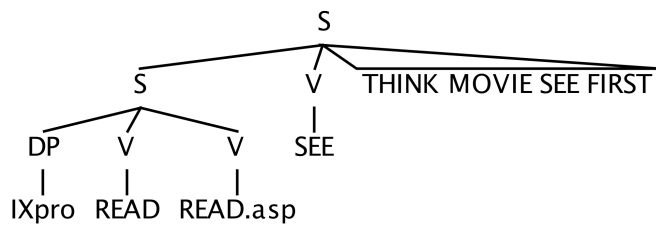
To demonstrate the function of (32), consider the c-structure of the sentence in which (32) is a subordinate clause:

(35) IX_{pro} READ_i $\text{READ}[\text{asp:cont}]_i$ SEE_j THINK MOVIE SEE_j

FIRST

‘While reading, she saw what she first thought was a movie.’

(36)



Next, we focus on a sentence in which there is adverbial information incorporated into the verb:

(37) IX_{pro1p} WAKE-UP TIME FIVE MORNING WAKE-UP[asp:cont][adv:hard]

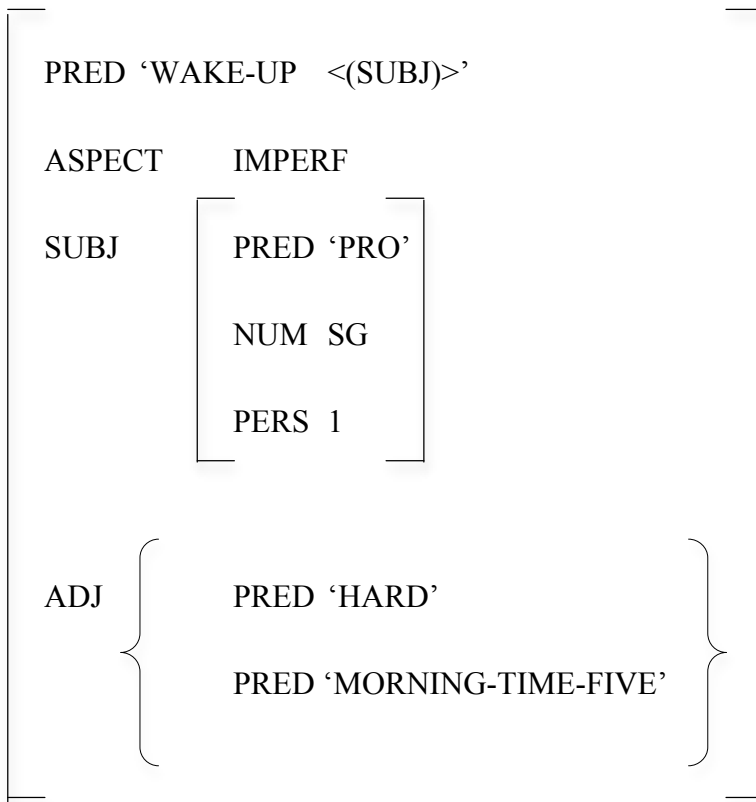
HARD

‘I had to wake up at five, and it was really hard getting up.’

The f-structure of (37) shows again that there is only one PRED representing the two variants of WAKE-UP.

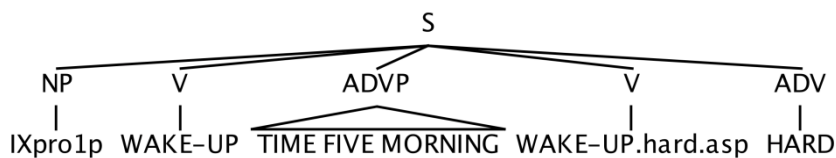
The adverbial adjunct HARD is also occurring twice in (37); once incorporated in the sentence-final verb, and once as an adjunct. If it is the case, as I have previously claimed (section 7.2.2), that the adverbial marking on the sentence-final verb is sufficient, hence leaving the lexical adverb HARD redundant, we have the same problem with unifying PREDs as with the verbs in the previous example. However, we have seen that the informants actually gave two different evaluations of the lexical adverb HARD. One said it was obligatory, and one said it could be omitted with the same meaning intact. If the lexical adverbial is obligatory, leaving the adverbial marking on the verb as a feature (without its own PRED) gives a standard analysis with unification in f-structure. For now we will observe that it only receives one PRED in the f-structure, while it is represented in two places in the sentence. The internal f-structures of the adjuncts are not represented as they are not relevant for the present study:

(38)



The c-structure proposed is (39). As we can see, all c-structures apart from (31) proposed for the biclausal structure, are flat:

(39)



The relationship between the two verbs WAKE-UP and WAKE-UP[asp:cont; adv:hard] is again not solved with this analysis. The two verbs clearly have two distinct functions, which could be reflected by making them heads of a functional and a lexical projection, respectively.

However, such an analysis would entail treating the first verb WAKE-UP as a kind of auxiliary, which is clearly not the case³², as it is not inflected for any functional information³³.

7.4.2 The Lexical Verb Sandwich Constructions

We have seen that I will treat the classifier constructions as verbs with incorporated lexical information (see section 2.3.2). The example to be analyzed is (24), repeated below as (40):

- i
- (40) CLEAN[adv:intens] CLEAN-FROM-CORNER-TO-CORNER[cl:wh. entity;
 _____i
 adv:intens]i
 'I clean the floor from corner to corner.'

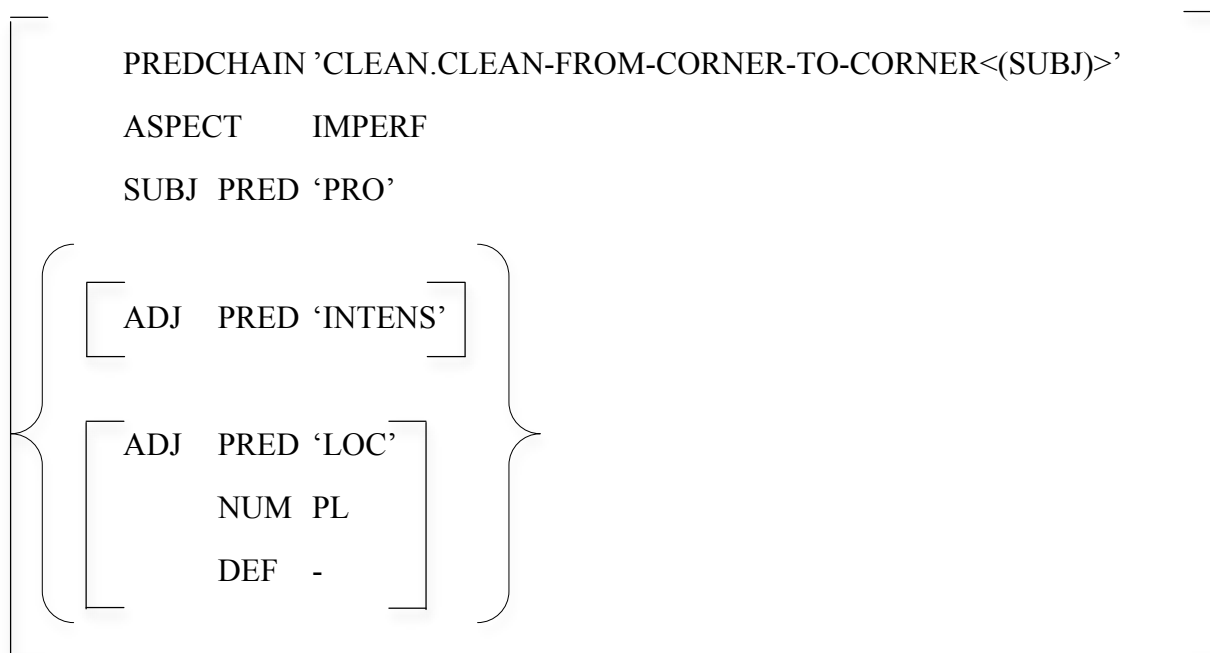
I will argue that these constructions represent complex predicates, i.e. in this case, serial verbs. Complex predicates are “predicates which are multiheaded; they are composed of more than one grammatical element (either morphemes or words), each of which contributes part of the information ordinarily associated with a head” (Alsina, Bresnan, and Sells 1997, 64:1). Following Kroeger (2004), serial verbs will be defined as a single clause that contains two or more verbs, neither of which is an auxiliary (Kroeger 2004, 222). As for the examples in this section, the two verbs have identical argument structure, neither of them is an auxiliary, and the prosodic markers tell us that they belong to the same intonational phrase. Therefore, in the following, I will treat them as serial verb constructions.

In (40) there is information of manner and location incorporated within the classifier. The f-structure proposed is (41). Following Bodomo (Bodomo 1997), I let the two verbs contribute to one PREDCHAIN³⁴:

³² The syntactic properties of an auxiliary entails that it can never be a predicate alone, it always needs another verb to follow after it (Åfarli et al. 2003, 131). Semantically, we can say that an auxiliary does not refer to an action.

³³ The movement analysis (see section 4.5.1 and note 25) would also be problematic due to the fact that the last verb is inflected (for aspect). Assuming that NSL is SVO and that after verb movement, the copy of the verb is exceptionally pronounced in the sandwich constructions, one would expect that the first verb is the inflected one (Lødrup, P.C.).

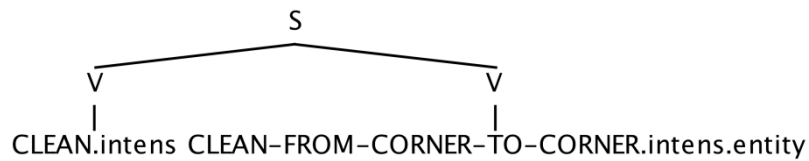
(41)



As stated earlier, in serial verb constructions, we have at least two verbs in addition to temporal, aspectual and other grammatical forms. The two or more verbs tend to behave as if they formed a single predicate item (Bodomo 1997, 2f). Adopting Bodomo’s theory of predicate integration, I propose that the two verbal predicates CLEAN[adv:intens] and CLEAN-FROM-CORNER-TO-CORNER[cl:wh. entity;adv:intens] form a grammatical unit that modify their individual semantics in such a way “as to contribute to a unique defining identity of the whole complex” (Bodomo 1997, 47). In (42), the c-structure is presented:

³⁴ Bodomo (1997) separates between the verbs in a PREDCHAIN with hyphens. Since I use hyphens in order to gloss the classifiers, I will use dots to separate between the verbs in a PREDCHAIN.

(42)



In the next example, the information conveyed by the classifier is location and its specification. From the last verb, we can know what kind of stairs she was running down: the kind that descends in a spiral:

_____i

(43) WOMAN FAT RUN[adv:fast] RUN-DOWNSTAIRS-IN-

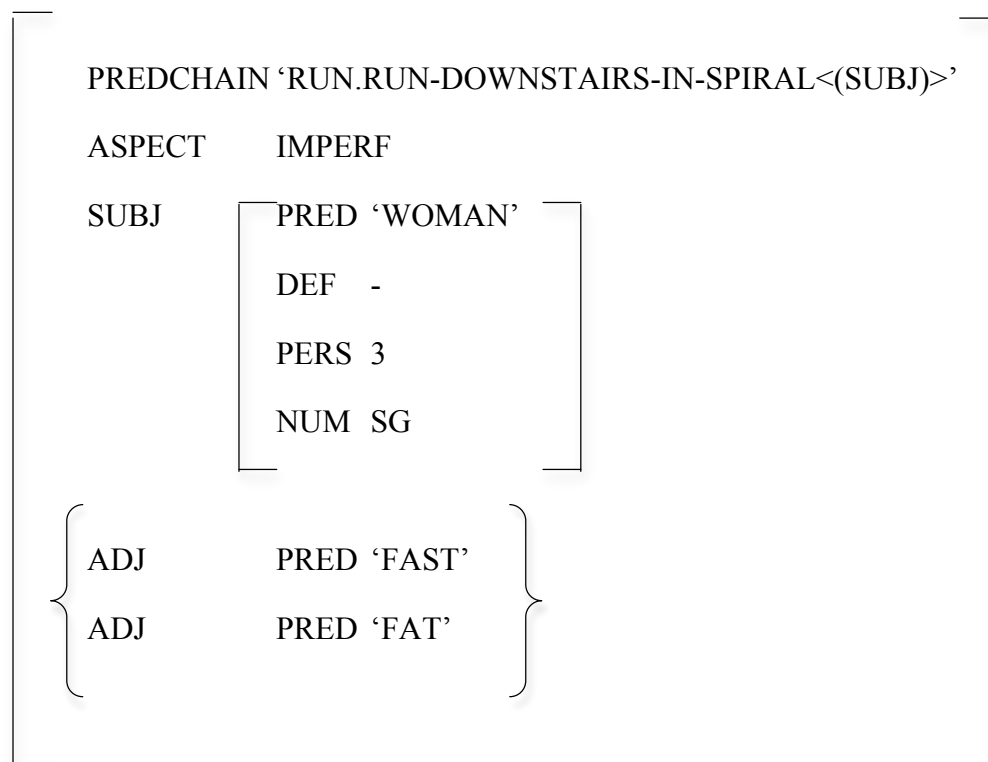
_____i

SPIRAL[cl:limb; adv:fast]

‘She ran all she could down the (spiral) stairs’

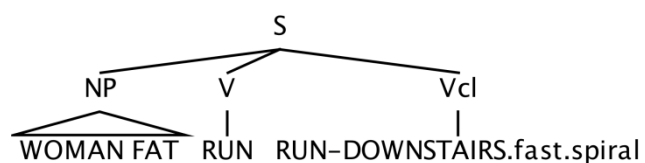
The location of the cleaning is incorporated in the classifier verb, as reflected in the PREDCHAIN of the f-structure. Also within the same verb, there is information of the physical properties of the location. Again we see that the f-structure reflects my treatment of these constructions as complex predicates:

(44)



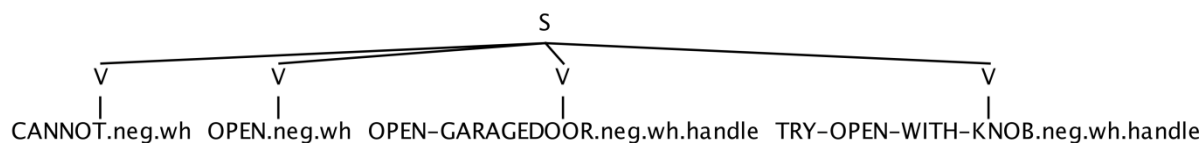
The c-structure reflects the same pattern we have seen previously:

(45)



In the last example there is a lot of significant nonmanual information to consider in the analysis:

(48)



7.4.3 Similar constructions in spoken languages

In the remainder of this chapter, we will compare the VSCs described up to now, with two similar constructions found in spoken languages; the synonymic serialization in Khmer and the aspectual complex predicate in Urdu.

Durie (Durie 1997) identifies a construction in Khmer in which two combined verbs are closely related in meaning. These constructions have identical argument structures; usually near-synonyms, and the two verbs are not related either causally or temporally. The following example is such a combination of verbs (only an extract of a larger clause)³⁵:

- (49) ponlæh ponloet
 skin skin.a.serpent (Durie 1997, 337)

Compare with the LVSC from NSL (where the nonmanuals are omitted):

- (50) RUN[adv:fast] RUN-DOWNSTAIRS-IN-SPIRAL[cl:limb; adv:fast]

(49) and (50) are both constructions in which the second verb is a specification of the first verb. Durie claims for these constructions, as we have seen similarly with the LVSCs in NSL, that the characteristics of verb serialization are better explained by the culture-specific construction of eventhood. Further, he claims the fusion of multiple argument structures into a

³⁵ Due to technicalities, the letters from Khmer are not entirely correct in this example. However, the point is to demonstrate two verbs with the second verb specifying the first.

single complex argument structure is a more apt explanation than a purely syntactic model. While I believe that this approach gives insight into the VSCs, I cannot pursue the interaction between semantics and syntax any further due to the scope of this thesis.

Butt (1997) found a construction for Urdu that she calls the Aspectual Complex Predicate in which the main verb is always in the base form, while the light verb is inflected. In (51), the underlined verbs form the complex predicate:

(51) vo ro par-aa

Pron=Nom weep fall-Perf. M. Sg

‘He fell to weeping (burst into tears).’ (Butt 1997, 120)

These two verbs always form a constituent, although emphatic particles and markers of negation may appear between the two predicates (Butt 1997, 120). The first verb is regarded as a light verb or vector verb and has a degree of semantic content; it needs to be semantically compatible with its main verb (ibid.). The aspectual complex predicate in Urdu cannot be directly compared to the VSCs in NSL due to the status of the light verb. However, Butt (1997) argues against treating the light verb as an auxiliary, pointing out that it places restrictions on the kind of main verb it combines with. In light of the Urdu construction, it might be interesting to pose the question whether or not the two verbs in a VSC from NSL are forming a constituent. This question cannot be answered with the limited amount of data available for the present study. For now, the comparison can serve to highlight the next step of investigating the syntactic structures of verb sandwich constructions in NSL.

Summary

We have in the previous section seen examples of three different VSCs that need three different analyses. The first one, with identical inflection on both verbs can be analyzed as a biclausal structure, where the verbs in the VSC seem to be subject to doubling, i.e., one is merely an empty copy of the other. One problem of this analysis is that the second instance of

the sandwich verb appears in the matrix clause, while I would argue that it belongs to the subordinate clause.

The next construction, with the aspectual (and adverbial) marking on only the second verb, is a little more tricky in that the verbs both contribute with new information, yet it still seems unreasonable to give them separate PREDs in the f-structure. I propose a special solution for these constructions, which is to let their PREDs unify even though this is not really allowed within the framework of LFG.

The LVSCs convey many types of information incorporated in the classifier verbs. My analysis of the LVSCs entails treating them as complex predicates, specifically serial verbs. The two verbs are not the same, so doubling cannot be involved. Moreover, they share argument structure, and in my data they are clearly not divided by any intonational boundaries. Consequently, I would argue that they both contribute to the same PRED in f-structure.

8 Conclusion

In this thesis I have described and analyzed verb sandwich constructions (VSCs) in Norwegian Sign Language (NSL) with special focus on their syntactic properties. The VSCs are constructions in which the same verb, or two verbs with highly similar meanings occur twice in one clause. The study presented in this thesis draws on data from interviews with two informants, and is thus a case study. In the data collected for the present study, I found reason to support the distinction between lexical and aspectual verb sandwich constructions (Matsuoka 1997), as well as subdividing the aspectual sandwich constructions in two categories. An example of the three different VSCs is provided below:

Aspectual Verb Sandwich Construction (AVSC) (Aspectual marking on both verbs):

- (1) $\text{SHEET-OF-PAPER}_i \text{ CUT}[\text{asp:cont}]_i \text{ PREPARE } \text{CUT}[\text{asp:cont}]_i$
 ‘I prepare (by cutting the sheets-of-paper)’

Aspectual Verb Sandwich Construction (AVSC) (Aspectual marking on one verb):

- (2) $\text{READ NEWSPAPER}_i \text{ DAY AFTER } \text{IX}_{\text{pro1p}} \text{ READ}[\text{asp:cont}]_i$
 ‘I read the newspaper the next day’

Lexical Verb Sandwich Construction (LVSC):

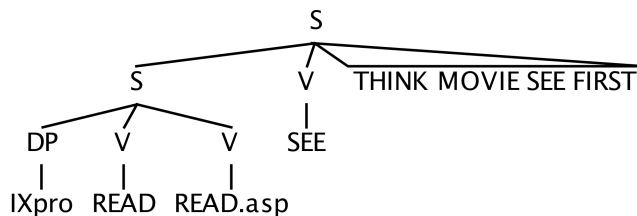
- (3) $\text{IX}_{\text{PRO}} \text{ SEND SMS } \text{SEND-FROM-CELLPHONE}[\text{cl:handle}]_i$
 ‘She sent me an SMS’

In the present thesis, I claim that the three categories of VSCs (one lexical and two aspectual) need three distinct analyses due to their different functions.

Starting with the AVSCs with aspect marking on the sentence-final verb, one of their functions appears to be signaling the subordinate clause in which they appear, as described by Fischer and Janis (1990). This is also the case for the corresponding category of VSCs in NSL. In (5) we can see how I have treated the two verbs in the subordinate clause as belonging to one hierarchical level in the syntax. In (4), only the subordinate clause with the AVSC is presented, while we can see how it is related to the matrix clause in (5):

- (4) IX_{pro} READ_i $\text{READ}[\text{asp:cont}]_i$
 ‘While she was reading (...)’

(5)

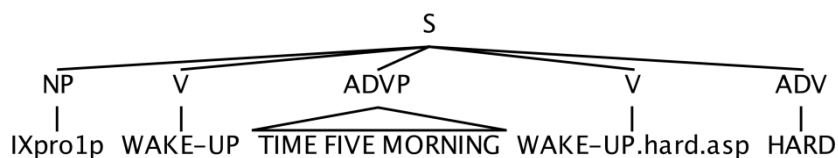


The VSC in (4) has no filling. However, this flat structure is also displayed with the AVSC with filling:

- (6) IX_{pro1p} WAKE-UP TIME FIVE MORNING WAKE-UP[asp:cont][adv:hard]
 HARD

‘I had to wake up at five, and it was really hard getting up.’

(7)

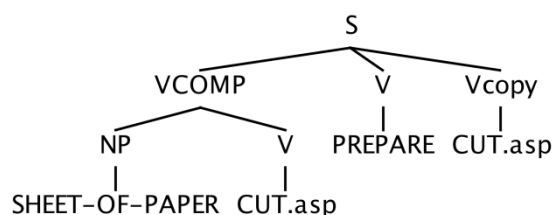


The function of the VSC in (6) is not to signal a subordinate clause, as (6) is not the subordinate clause to anything. Thus, the VSCs apparently occur with other functions as well, also acknowledged by Fischer and Janis (1990). The flat structures of the trees in (1) and (2) demonstrate that I regard the AVSC with the aspect marking on only one verb to represent a monoclausal structure.

Turning to the type of AVSC in which I claim that one is an empty copy of the other, in my examples these have another predicate as their filling, and consequently the structure has two hierarchical levels:

- (8) $\overline{\text{SHEET-OF-PAPER}_i \text{ CUT}[\text{asp:cont}]_i}$ PREPARE $\overline{\text{CUT}[\text{asp:cont}]_i}$
 ‘I prepare (by cutting the sheets-of-paper)’

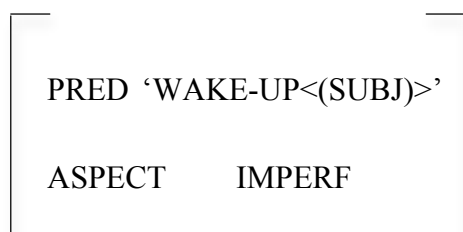
(9)



The copy is seen as “dangling” from the top-level, while the first verb is part of a VCOMP, forming a distinct level. This kind of spreading of one verb is not easy to give an account for in terms of constituent order, as a verb belonging to the subordinate clause also appears in the matrix clause. Syntactic doubling in general is not uncommon in the languages of the world. However, the kind of doubling observed in (8); doubling with two identical lexical elements is rare (Barbiers 2008). Further investigations of these constructions in NSL and other sign languages might shed light on the syntactic doubling phenomenon in general.

As for the f-structures of both of the AVSCs, my analysis suggests that the PREDs of the verbs in the sandwich constructions are unified, as in (10):

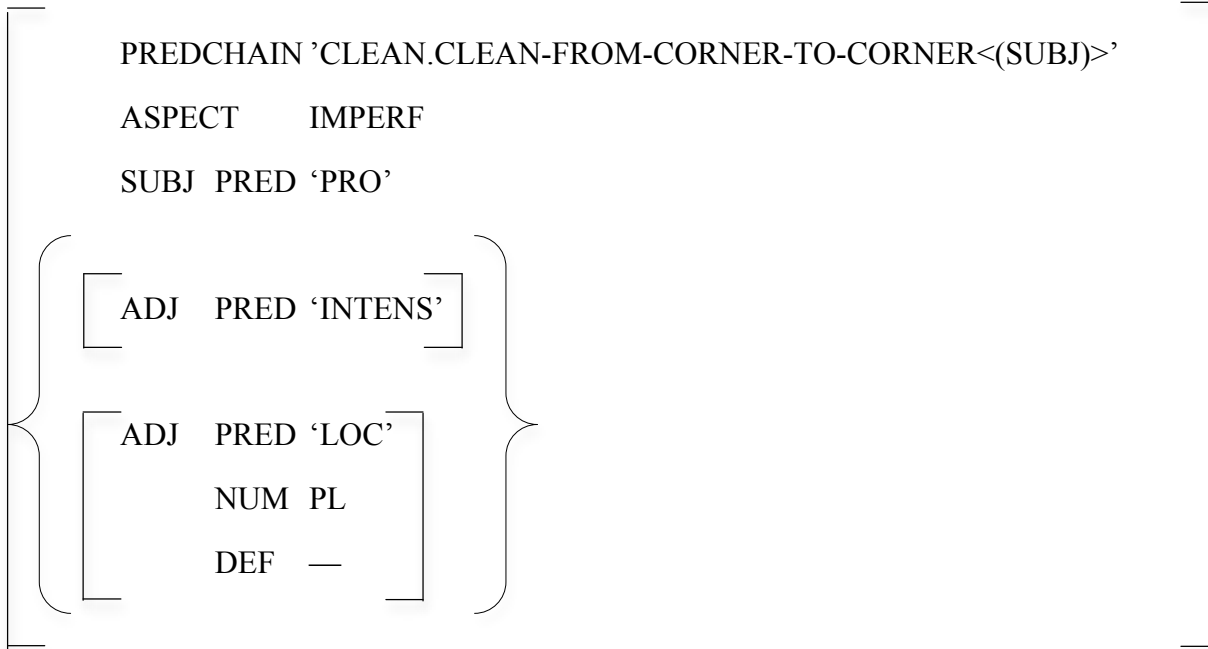
(10)



It is not reflected in the f-structure that WAKE-UP appears twice in the sentence. This reflects my treating of them as contributing to the same PRED in f-structure, i.e. their PREDs unify. We have seen that this way to deal with the VSCs is not unproblematic (see section 7.4.1). Another approach to these constructions might be to call all verbs in VSCs complex predicates, letting them contribute to one complex predicate, regardless of the fact that they are two occurrences of the same verb. An argument for treating the two main categories of VSCs the same way is that the distinction between the aspectual and the lexical verb sandwich constructions cannot be regarded absolute, as we have seen. The latter also have aspectual marking and the former may also convey information about the object by means of the eye gaze. One could be tempted to ask whether there is a semantic property that determines the choice between the aspectual and the lexical verb sandwich construction, one of the issues in need of further investigation. While we leave the AVSC with an unanswered question, we move on to the next category.

The second main category is the LVSCs. I have analyzed these as complex predicates, letting them contribute to the same PREDCHAIN in f-structure:

(11)




I have compared the example in (11) to a construction found in Khmer, the synonymic serialization (Bodomo 1997), which is highly similar to some of the LVSCs (see section 7.4.3). I thus follow Bodomo (1997), labeling these constructions serial verb construction. Bodomo (Bodomo 1997, 1) claims that serial verb constructions actually occur in most natural languages of the world. From this study, there are indications that they are frequent in NSL³⁶.

As for the nonmanual information, there are both consistent and inconsistent patterns to be found. Concerning the eye gaze, we have seen varying behavior. However, when the second verb in the AVSC is accompanied by a mouthing (not a mouth gesture), the eye gaze seems to compensate for the lacking aspect marking. Hence, I have no examples in my data with lacking aspect marking altogether. In this respect, it must be kept in mind that this is a case

³⁶ I found several examples of serial verb constructions in the relatively limited set of data collected for this study. As most of them are not at the same time sandwich constructions, they are not presented in the present thesis.

study. The data is therefore too small to generalize. The mouth patterns with the LVSCs are quite consistent: the first verb is unmarked, while the classifier is always accompanied by a mouth gesture.

We have seen one example in which I claim that the time adverbial is part of the VSC. As NSL is not a tense-language (Selvik 2006), time is pervasively expressed by adverbs. However, the idea that adverbs can ‘mark’ the verb in the same way as aspectual marking is a proposal provided from the present study:

- 
- (12) SEE THINK MOVIE SEE FIRST
- ‘(...) she saw what she first thought was a movie.’

In the analyses of this thesis, I have relied on prosodic information, e.g. head nods, negation marking and eye gaze while choosing the chunks of signs to analyze. However, while the prosodic information might well serve as guidelines as to how to divide the utterances into clauses (see section 3.4.2), they are not fully reliable. This situation is parallel in spoken and signed languages. That is, while there are clear patterns to find among the prosodic information, there are numerous exceptions. In signed languages, the picture is further complicated by the fact that prosodic information occurs in the same channel as grammatical information; the nonmanual components.

While the issue of basic sign order in NSL has not been the focus of my thesis, one observation is the following: Accounting for the constituent structure in NSL becomes a challenge as the verbs in a VSC can appear several places in a clause, seemingly contributing to the same PRED. The assumption of SVO as the basic sign order in NSL is therefore not self-evident. In the original analysis (Fischer and Janis 1990), the VSCs are explained by the “heaviness of the verb.” Working with space in Danish Sign Language, Engberg-Pedersen (1993) puts the issue in a larger frame of reference:

But it must also await a deeper understanding of a characteristic of signed languages which has turned up several times in this analysis of the use of space in Danish Sign Language and which also appears

from Supalla's analysis of serial verb constructions and Fischer and Janis' analysis of verb sandwiches in ASL, namely, the fact that certain kinds of information can show up in several different places in the clause (...) in verb sandwiches and serial verb constructions, the information is distributed over two separate verbs (Engberg-Pedersen 1993, 273).

Whether the VSCs are simply a result of this "characteristic of signed languages" or if they can be explained by universal syntactic principles is an issue in need of more extensive investigation.

Applying LFG, a non-transformational theory of grammar to the VSCs, leaves us with the question of how these constructions are derived, i.e. do they come in pairs from the lexicon, or are they formed in the syntax? We have seen that LFG accounts for valency alternations by means of lexical entries that reflect all valency patterns directly, and that verbs demand a distinct lexical entry for example with the passive construction (section 5.5). From this viewpoint it could be considered reasonable to treat the VSC in a similar manner: that the verbs need one lexical entry when appearing alone and one lexical entry when appearing in pairs. However, the valency is not really different between the two uses of the verbs, and the comparison might not be relevant.

Butt (1997) argues that the predicates from Urdu must be formed in the syntax, and not in the lexicon, as she claims the two verbs are not compounds since other elements in the clause may appear between them. Thus, both in Urdu and in NSL, we are dealing with the following paradox: Two verbs that are tightly connected, but not compounds, appear in one clause. In order to find a solution to treat these constructions, we need more extensive studies that can tell us whether the two occurrences of the verb are obligatory in some contexts, while not in others. For now, the tendency seems to be that they are formed in the syntax, since the verbs in question can also occur on their own.

Throughout this thesis, we have seen that NSL syntax is a knowledge area with many gaps that need to be filled. With the present study, I have attempted to amend this situation. However, as is typically the case in new areas of research, the investigations seem to raise more questions in the process of trying to find answers. My hope is that some of the questions pointed out will be pursued in the future, contributing further to the task of exploring the syntax of Norwegian Sign Language.

References

- Alsina, Alex, Joan Bresnan, and Peter Sells. 1997. *Complex predicates*. Vol. 64. CSLI lecture notes. Stanford, Calif.: Center for the Study of Language and Information.
- Arellano, Gabriel. 2006. A linguistic analysis of prosodic phrase boundary in British sign language, Mexican sign language, American sign language, and Japanese sign language. In *TISLR 9 : Theoretical Issues in Sign Language Research 9*. Vol. 9. Brasil: Universidade Federal de Santa Catarina.
- Aronoff, Mark, Irit Meir, Carol Padden, and Wendy Sandler. 2003. Classifier Constructions and Morphology in two sign languages. In *Perspectives on Classifier Constructions in Sign Languages*. Mahwah, New Jersey: Psychology Press.
- Barbiers, Sjef. 2008. Microvariation in Syntactic Doubling - An Introduction. In *Microvariation in Syntactic Doubling*, ed. Sjef Barbiers, Olaf Koenenman, Marika Lekakou, and Margreet van der Ham, 36:1-37. Syntax and Semantics. Bingley: Emerald Group Publishing Limited.
- Benedicto, Elena, Sandra Cvejanov, and Josep Quer. 2007. Valency in classifier predicates: A syntactic analysis. *Lingua* 117, no. 7 (July): 1202-1215. doi:10.1016/j.lingua.2005.06.012.
- Bodomo, Adams B. 1997. *Paths and pathfinders: exploring the syntax and semantics of complex verbal predicates in Dagaare and other languages*. Trondheim: Norges teknisk-naturvitenskapelige universitet.
- Bos, Heleen. 1990. Person and Location Marking in SLN: Some Implications of a Spatially Expressed Syntactic System. In *Current Trends in European Sign Language Research*, ed. Siegmund Prillwitz and Tomas Vollhaber, 9:231-248. Hamburg: SIGNUM Verlag.
- Braem, Penny Boyes, Rachel Sutton-Spence, Penny Boyes Braem, and Rachel Sutton-Spence. 2001. Introduction. In *The Hands are the Head of the Mouth*, 39:1-8. International studies on sign language and communication of the deaf. Hamburg: Signum Verlag.
- Brentari, Diane. 1995. Prosodic Constraints in American Sign Language: Evidence from Fingerspelling and Reduplication. In *Sign Language Research 1994*, ed. Inger Ahlgren and Brita Bergman, 29:39-52. Hamburg: SIGNUM.
- Bresnan, Joan. 2001. *Lexical-functional syntax*. Malden, Mass.: Blackwell, utsendt 2000.
- Butt, Miriam. 1997. Complex Predicates in Urdu. In *Complex Predicates*, ed. Alex Alsina, Joan Bresnan, and Peter Sells. Vol. 64. Stanford, Calif.: CSLI Publications.
- Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.
- . 2002. *Syntactic structures*. Berlin: Mouton de Gruyter.
- Comrie, Bernard. 1976. *Aspect: an introduction to the study of verbal aspect and related problems*. Cambridge: Cambridge University Press.
- Cormier, Kearsy. 2002. Syntax in sign: Few or no effects of modality. In *Modality and Structure in Signed and Spoken Languages*, ed. David Quinto-Pozos, Kearsy Cormier, and David Quinto-Pozos, 237-239. Cambridge: Cambridge University Press.
- Costa, João, and Maria Cristina Figueiredo Silva. 2006. *Studies on agreement*. Amsterdam: John Benjamins.
- Durie, Mark. 1997. Grammatical Structures in Verb Serialization. In *Complex Predicates*, ed.

- Alex Alsina, Joan Bresnan, and Peter Sells, 289-354. Stanford: CSLI Publications.
- Edmondson, William H. 1990. A Non-Concatenative Account of Classifier Morphology in Signed and Spoken Languages. In *Current Trends in European Sign Language Research*, ed. Siegmund Prillwitz and Tomas Vollhaber, 9:187-202. Hamburg: SIGNUM Verlag.
- Engberg-Pedersen, Elisabeth. 1993. *Space in Danish sign language: the semantics and morphosyntax of the use of space in a visual language*. Hamburg: Signum.
- Erlenkamp, Sonja. *Meaning at hand - mechanisms of grammatical construction in Norwegian Sign Language*. Forthcoming. Trondheim: Mouton de Gruyter, Forthcoming.
- . 2009a. "Gesture Verbs." Cognitive-visual mechanism of "classifier verbs" in Norwegian Sign Language. *CogniTextes* 3: 1-33.
- . 2009b. Forholdet mellom hunder og katter er ikke som forholdet mellom nøkkelen og døren. *Døves Tidsskrift* 4, no. 4: s. 25.
- Erlenkamp, Sonja, Sissel Gjøn, Hilde Haualand, Hanne Kvitvær, Paal Richard Peterson, Odd-Inge Schröder, and Arnfinn Vonen. 2007. *Begrunnelser for å gjøre norsk tegnspråk til offisielt språk*. Note from committee founded by the Norwegian Association of the Deaf. Oslo.
- Falk, Yehuda N. 2001. *Lexical-functional grammar: an introduction to parallel constraint-based syntax*. Vol. 126. CSLI lecture notes. Stanford, Calif.: Center for the Study of Language and Information.
- Fischer, Susan, and Wynne Janis. 1990. Verb Sandwiches in American Sign Language. In *Current Trends in European Sign Language Research*, ed. Siegmund Prillwitz and Tomas Vollhaber, 9:279-293. Hamburg: SIGNUM Verlag.
- Haualand, Hilde. 2006. Et samfunn uten sted. In *Tegn som språk. En antologi om tegnspråk*, ed. Sissel Redse Jørgensen and Rani Lill Anjum, 17-32. Oslo: Gyldendal akademisk.
- Kermit, Patrick. 2006. Tegnspråk og anerkjennelsen av døve som en språklig minoritet. In *Tegn som språk. En antologi om tegnspråk*, 47-59. 1. ed. Oslo: Gyldendal akademisk.
- Kroeger, Paul. 2004. *Analyzing syntax: a lexical-functional approach*. Cambridge: Cambridge University Press.
- Liddell, Scott K, Marit Vogt-Svendsen, and Brita Bergman. 2007. A crosslinguistic comparison of buoys. In *Simultaneity in Signed Languages. Form and function*, ed. Myriam Vermeerbergen, Lorraine Leeson, and Onno Crasborn, 281:187-215. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Liddell, Scott K. 1977. *An investigation into the syntactic structure of American Sign Language*. San Diego.
- . 2003. *Grammar, gesture, and meaning in American Sign Language*. Cambridge: Cambridge University Press.
- Lillo-Martin, Diane. 2002. Where are all the modality effects? In *Modality and Structure in Signed and Spoken Languages*, ed. Richard P. Meier, Kearsy Cormier, and David Quinto-Pozos, 241-262. Cambridge: Cambridge University Press.
- Lillo-Martin, Diane C. 1991. *Universal grammar and American Sign Language: setting the null argument parameters*. Dordrecht: Kluwer.
- List, Günther, Siegmund Prillwitz, and Tomas Vollhaber. 1990. Under the Conditions of

- Oralism. The History of the Deaf in German-Speaking Countries. In *Current Trends in European Sign Language Research*. Vol. 9. Hamburg: SIGNUM Verlag.
- Lødrup, Helge. Lexical Functional Grammar: Functional Structure. In *Nontransformational Syntax: A guide to Current Models*, ed. Robert D. Borsley and Kersti Börjars. To appear. Oxford: Blackwell, To appear.
- Matsuoka, Kazumi. 1997. Verb raising in American Sign Language. *Lingua*, no. 103: 127-149.
- . 1999. The Lexical Verb Sandwich in American Sign Language and the Hybrid Feature. In *ESCOL'99*, ed. Rebecca Daly and Anastasia Riehl, 142-148. Storrs: Cornell University.
- McBurney, Susan Lloyd. 2002. Pronominal reference in signed and spoken language: Are grammatical categories modality dependent? In *Modality and Structure in Signed and Spoken Languages*, 329-369. Cambridge: Cambridge University Press.
- Müller de Quadros, Ronice, and Diane Lillo-Martin. 2010. Clause structure. In *Sign Languages*, ed. Diane Brentari, 225-251. New York: Cambridge University Press.
- Neidle, Carol, Judy Kegl, MacLaughlin, Bahan, and Lee. 2000. *The Syntax of American sign language: functional categories and hierarchical structure*. Cambridge, Mass.: MIT Press.
- Nordlinger, Rachel. 1998. *Constructive case: evidence from Australian languages*. Stanford, Calif.: CSLI Publications.
- Padden, Carol. 1988a. Grammatical theory and signed languages. In *Linguistics: The Cambridge survey. Linguistic theory: extensions and implications*, ed. Frederick J. Newmeyer, 2:250-266. Linguistic Theory: Extensions and Implications. New York: Cambridge University Press.
- Padden, Carol A. 1988b. *Interaction of morphology and syntax in American sign language*. New York: Garland.
- . 1990. The Relation Between Space and Grammar in ASL Verb Morphology. In *Sign Language Research. Theoretical Issues*, ed. Ceil Lucas, 118-132. Washington, D.C.: Gallaudet University Press.
- Peterson, Svein Arne. 2006. Om å leve i et tospråklig samfunn. In *Tegn som språk. En antologi om tegnspråk*, ed. Sissel Redse Jørgensen and Rani Lill Anjum, 71-78. 1. ed. Oslo: Gyldendal akademisk.
- Pfau, Roland. 2002. Applying morphosyntactic and phonological readjustment rules in natural language negation. In *Modality and Structure in Signed and Spoken Languages*, ed. Richard P. Meier, Kearsy Cormier, and David Quinto-Pozos, 263-295. Cambridge: Cambridge University Press.
- Pfau, Roland, and Josep Quer. 2010. Nonmanuals: their grammatical and prosodic roles. In *Sign Languages*, ed. Diane Brentari, 381-402. Cambridge: Cambridge University Press.
- Poletto, Cecilia. 2008. . In *Microvariation in Syntactic Doubling*, 36:37-68. Syntax and Semantics. Cornwall, Great Britain: Emerald Group Publishing Limited.
- Rathmann, Christian, and Gaurav Mathur. 2002. Is Verb agreement the same crossmodally? In *Modality and Structure in Signed and Spoken Languages*, ed. Richard P. Meier,

- Kearsy Cormier, and David Quinto-Pozos, 370-404. Cambridge: Cambridge University Press.
- Sandler, Wendy, and Diane C. Lillo-Martin. 2006. *Sign language and linguistic universals*. Cambridge: Cambridge University Press.
- Schröder, Odd-Inge. 2006. Likt og ulikt. In *Tegn som språk. En antologi om tegnspråk*, ed. Sissel Redse Jørgensen and Rani Lill Anjum, 79-101. 1. ed. Oslo: Gyldendal akademisk.
- Selvik, Kari-Anne. 2006. *Spatial paths representing time: a cognitive analysis of temporal expressions in Norwegian Sign Language*. Oslo: Det humanistiske fakultet, Universitetet i Oslo.
- Slowikowska, Beata. 2009. Tidlig språkutvikling hos et døvt barn av døve foreldre. M.A., Oslo: Universitetet i Oslo.
- Stokoe, William C. 1960. *Sign language structure: an outline of the visual communication systems of the American deaf*. Vol. 8. Studies in linguistics, Occasional papers. Buffalo, N. Y.: The University.
- Supalla, Ted. 1990. Serial Verbs of Motion in ASL. In *Theoretical issues in sign language research*, ed. Susan D. Fischer and Patricia Siple, 1: Linguistics:127-153. Chicago, London.
- Sutton-Spence, Rachel, and Bencie Woll. 1999. *The linguistics of British Sign Language: an introduction*. Cambridge: Cambridge University Press.
- Vogt-Svendsen, Marit. 1981. Undersøkelse av tegnspråk. [Hosle]: Statens spesiallærerhøgskole.
- . 1983. *Norske døves tegnspråk: noen pedagogiske og språkvitenskapelige aspekter*. [Trondheim]: Tapir.
- . 1990. *Interrogative strukturer i norsk tegnspråk: en analyse av nonmanuelle komponenter i 86 spørsmål*. Trondheim: Det historisk-filosofiske fakultet, Den allmennvitenskapelige høgskolen, Universitetet i Trondheim.
- . 2001. A Comparison of Mouth Gestures and Mouthings in Norwegian Sign Language (NSL). In *The Hands are the Head of the Mouth*, ed. Penny Boyes Braem and Rachel Sutton-Spence, 39:9-40. International studies on sign languages and communication of the deaf. Hamburg: SIGNUM Verlag.
- Vonen, Arnfinn Muruvik. 2006. Tegnspråk i et lingvistisk perspektiv. In *Tegn som språk. En antologi om tegnspråk*, ed. Sissel Redse Jørgensen and Rani Lill Anjum, 125-150. 1. ed. Oslo: Gyldendal akademisk.
- Åfarli, Tor Anders, Kristin Melum Eide, Lars G. Johnsen, Randi Alice Nilsen, and Torbjørn Nordgård. 2003. *Norsk generativ syntaks*. Oslo: Novus.

Appendix

Below is the interview guide I used when interviewing the informants.

Intervjuguide for MA-prosjekt

Har du opplevd å bli intervjuet på denne måten før?

(Were you ever interviewed like this before?)

Hva gjorde du i går, og dagen før?

(What did you do yesterday, and the day before?)

Hva skal du i morgen og til helgen?

(What are your plans tomorrow and for the weekend?)

Kan du beskrive en typisk dag på jobb?

(Can you describe a typical day at work?)

Kan du beskrive en typisk dag du har fri?

(Can you describe a typical day off?)

Hva gjør du vanligvis før jobb?

(What do you usually do before you go to work?)

Hvilke ting gjør du på jobb/hvilke oppgaver har du?

(What do you do at work/ what are your tasks?)

Hvilke ting gjør du etter jobb?

(What kind of things do you do after work?)

Husker du hva du gjorde 11. September 2001? Fortell.

(Do you remember what you did on 9/11? Can you tell me about it?)

Hva slags husarbeid liker du best?

(What is your favorite house work?)

Hvor ofte gjør du dette?

(How often do you do this?)

Beskriv prosedyren for hvordan du gjør dette.

(Describe the procedure for how you do it.)

Hvor ofte tar du en dusj?

(How often do you take a shower?)

Hvor ofte ser du på tv? Favorittprogram? Hvor ofte går dette?

(How often do you watch tv? Favorite show? How often is it on?)

Hvor ofte ser du film?

(How often do you watch a movie?)

Hvor ofte leser du en bok?

(How often do you read a book?)

Hvor ofte går du en tur?

(How often do you go for a walk?)

Hvor ofte lager du middag?

(How often do you make dinner?)

Hvor ofte spiser du fisk?

(How often do you eat fish?)

Hvor ofte spiser du kjøtt?

(How often do you eat meat?)

Se for deg en situasjon hvor du kommer hjem, og huset ditt er et eneste kaos. Hva er det første du vil tenke, og hva er det første du vil gjøre?

(Picture a situation where your house is a mess when you come home. What is the first thing you will think and do?)

Mange sier at kvinners simultankapasitet er bedre enn menns. Er du enig? Kan du beskrive en situasjon hvor du gjør to ting samtidig?

(People say that a woman's simultaneous capacity is better than that of a man's. Do you agree? Can you describe a situation when you do two things at the same time?)

Kan du beskrive hva som skjer på bildet? (Cookie-theft)

(Can you describe what is going on in the picture?) (Cookie-theft)

Hvordan synes du det har vært å bli intervjuet?

(How did you feel about being interviewed this way?)

